

**Energy Resources Conservation  
And Development Commission**

**TESTIMONY OF CALIFORNIA ENERGY COMMISSION  
STAFF ON IOU APPEALS OF EXECUTIVE DIRECTOR'S  
NOTICE OF INTENT TO RELEASE AGGREGATED DATA**

July 8, 2005

## Testimony of Kevin M. Kennedy

### Introduction

The information provided by the state's utilities is a key part of the record for the *2005 Integrated Energy Policy Report (Energy Report)* proceeding. Evaluation of this information by Energy Commission staff and other parties will help inform the findings and recommendations in the *2005 Energy Report*, which in turn will form the basis for the transmittal of data and recommendations to the California Public Utilities Commission (CPUC) for the 2006 long-term procurement proceeding.

As noted in the Energy Commission's orders denying appeals of earlier Executive Director determinations on confidentiality of demand data, the Public Records Act (Gov. Code, § 6250 et seq.) states that "access to information concerning the conduct of the people's business is a fundamental and necessary right of every person in this state." (Gov. Code, § 6250) The Act establishes a general principle that every person has the right to inspect any "public record," subject to various exceptions. (Gov. Code, § 6253) Public records are broadly defined, and include "any writing containing information relating to the conduct of the public's business prepared, owned, used, or retained by any state or local agency regardless of physical form or characteristics." (Gov. Code, § 6252) In addition, the state Constitution now directs that statutes and regulations shall be broadly construed if they further the people's right of access, and narrowly construed if they limit the right of access. (Cal. Const., art. I, § 3, subd. (b)(2))

One exception to the Public Records Act's general rule of disclosure is for trade secrets. While the Energy Commission is bound by state law and its own regulations to respect trade secrets and to protect them when submitted to the Energy Commission, as a matter of policy, the Energy Commission has long advocated for the greatest possible openness in the planning processes. This objective was clearly communicated in the spring of 2003, when the California Public Utilities Commission (CPUC) sought comments on a proposed protective order for one of the early rounds of procurement proceedings, and was reiterated in additional comments filed with the CPUC in January 2004 at the conclusion of that proceeding.<sup>1</sup> IOUs in particular expressed views seeking confidential treatment for a broad range of planning data. Unfortunately, the CPUC process failed to resolve this differences, so when the Energy Commission sought to obtain similar planning data as part of the 2005 Integrated Energy Policy Report Proceeding (*2005 Energy Report*), this underlying conflict in views was replayed in the Energy Commission's own confidential data regulations.

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<sup>1</sup> Letter of William J. Keese to CPUC President Michael R. Peevey summarizing Energy Commission ideas about the appropriate nature of confidential protections for procurement-related data, April 16, 2003.

The Energy Commission staff is committed to ensuring that the *2005 Energy Report* policy proceeding is conducted in an open and public manner. Staff understands that all the information that the Energy Commission considers in developing findings and recommendations in the *2005 Energy Report* and accompanying transmittal report for the CPUC will be part of the public record. While monthly demand and monthly specific resource data at the investor-owned utility (IOU) bundled service load level has been granted confidentiality, the Energy Commission will transmit information to the CPUC on the IOU positions through the *2005 Energy Report* process, and expects that all parties will have the opportunity to review and comment on this information. In order to meet this objective, staff proposed releasing public summaries and aggregations of the confidential data for outside parties and Energy Commissioners to review. These summaries and aggregations would allow all parties to understand the supply/demand picture for the state and for the individual utilities, while protecting any underlying data that is confidential. This testimony addresses the aggregation proposals identified in the Executive Director's Notice of Intent to Release Aggregated Data, dated June 3, 2005. These proposals apply to electricity supply data filings provided by all load serving entities within the state that were due on March 1 and April 1, 2005.

The basic dispute under consideration at the Energy Commission's July 13, 2005 business meeting is whether the aggregated summaries of confidential data that staff proposed to publish are themselves trade secrets deserving confidential treatment. As discussed below, staff has determined that the summary tables in the aggregation proposal do not reveal trade secrets, and the arguments put forward by the IOUs in appealing that proposal fail to demonstrate that the information revealed is a trade secret.

### **Data filed by utilities**

The data provided by the IOUs included monthly forecasts of demand, key adjustments to demand, and the resources they own, have under contract, or anticipate for serving that demand. The data was provided for the years 2006 to 2016. The adjustments to demand included portions of the demand that are expected to be served by other parties, such as direct access electricity providers, municipal utilities, or through community choice aggregation, and reductions in demand resulting from future demand response or energy efficiency. The data on resources included specific data on each nuclear or fossil power plant controlled by the IOU, on small (30 megawatts or less) and large (over 30 megawatts) hydroelectric plants, on individual pumped storage facilities. In addition, the resource information included data on qualifying facility (QF) contracts by fuel type, and on all other individual contracts. This data was submitted by the IOUs for four separate scenarios, as directed by the Energy Commission. At this level of detail, this resource plan data has been granted confidentiality under the Energy Commission regulations.

These forms contain two basic types of resource data. The first is monthly productive capacity of the resources, which shows the highest level of supply that is possible in each month. These values are important for electricity planning, because the utilities are expected to have adequate resources to serve the expected peak demand, plus a reserve margin. Capacity data is typically given in megawatts (MW). The second type of resource data is monthly energy data, which shows the total amount of electricity that is expected to be produced over the course of each month. Energy is typically measured in terms of gigawatt-hours (GWh).

### **Aggregation proposal**

The staff developed a set of proposals to provide annual and quarterly summaries of this detailed monthly data. Staff proposed three forms of aggregation. The first would summarize data provided by the IOUs specific to the needs of their “bundled” customers (i.e. those customers for which the utility provides both electricity and electricity distribution services, as opposed to customers who use their distribution service, but who buy their electricity from another company). The second would summarize data identifying the needs of all customers within the IOU’s service territory; plus associated publicly-owned utility resources using the IOU transmission system. This approach is referred to as the ‘planning area’ aggregation. For both of these approaches, aggregated summary tables would be published for each of the resource scenarios filed by the IOUs. A third approach would further aggregate the capacity data from the second by providing a single table that shows the range of capacity values across the different scenarios. Because publication of the second form of aggregation would allow tables to be created, I will not discuss this approach in this testimony.

For each of these proposals, staff proposed to summarize the detailed monthly data in two ways. First, staff proposed to combine the specific resource listings (e.g. individual power plants, or individual contracts) into categories of resources (e.g. utility-controlled fossil resources, or existing & planned renewable contracts). In addition, staff proposed to summarize monthly data on a quarterly and annual basis. For the capacity aggregation, staff would identify values for the single month in which the forecast total peak demand is highest, without identifying what month was selected. For example, in preparing an annual capacity aggregation, if peak demand is highest in August for a specific year, all values in the aggregation for that year will be from August, although August would not be identified. For the energy tables, the data would be summed over the months in quarters and years.

A final feature of staff’s aggregation proposal is that it would only include the annual and quarterly summaries for the years 2009 through 2016. Data submitted for years 2006 – 2008 would not be published, even in an aggregated form. Staff has consistently recognized that data for near-term years is more sensitive because there is often limited ability of new electricity generation or demand reduction products to enter the markets in response to utilities’ needs, thereby giving existing generators more ability to negotiate more favorable terms. However, release of

longer-term information provides market signals that encourage investment in generating resources and demand reduction programs, thereby allowing IOUs to select from competing suppliers.

### **IOU response to aggregated data proposals**

The three IOUs responded individually to this package of proposed aggregation summaries. None of the utilities opposed the following portions of the staff proposal:

- ◆ IOU bundled-customer annual energy data,
- ◆ Planning area annual energy data, and
- ◆ Planning area annual capacity data.

One or more of the IOUs objected to the following aggregation approaches:

- ◆ IOU bundled-customer annual capacity data,
- ◆ IOU bundled-customer quarterly capacity data,
- ◆ IOU bundled-customer quarterly energy data,
- ◆ Planning area quarterly capacity data, and
- ◆ Planning area quarterly energy data.

### **Non-confidentiality of aggregated data**

Energy Commission regulations allow the Executive Director to release records designated as confidential if the information has been masked or aggregated to the point necessary to protect confidentiality. In proposing to publish these aggregated data summaries, staff determined that the summaries did protect the confidentiality of the underlying data.

In general, the IOUs have argued that the detailed monthly information is a trade secret because it reveals the amount of capacity or energy that the utilities need to purchase or sell in future months, e.g. the degree of mismatch between resources available to the IOU versus the demand of their customers. They maintain that making this information available to market participants would necessarily lead to higher prices for their rate payers. The Executive Director agreed that the utilities had made a reasonable argument that this monthly, resource-specific data was a trade secret, and so, under the Energy Commission regulations, agreed to keep it confidential.

The IOUs generally further maintain that the IOU bundled-customer annual capacity summary tables and for any of the quarterly summary tables are also trade secrets because they would result in similar economic harm if released. While the detailed monthly data is being treated as confidential, the aggregated summaries do not constitute trade secrets. The IOUs claims of economic harm if these summaries are released fail to account for the long-term beneficial effects that are likely to result, the availability of similar data for the IOUs and for other utilities that operate in the same markets, and the lack of specificity in the summaries. These issues are

summarized below and explained in more detail in the testimony of Dr. Michael Jaske and Julia Frayer.

### ***Long term effects of disclosure***

In maintaining that disclosure of incremental information about capacity and energy needs at anytime in the forecast period necessarily results in harm, the utilities ignore the benefits that are likely to result from creating a more open market place in the longer term. The potential harm that may come from market manipulation evaporates when adequate time is available for additional resources, whether new generation resources, transmission upgrades or additions, or demand side management programs, to be brought on line in response to the need. Because the proposed summaries start with data for 2009, publication would allow more than three years during which additional resources are likely to become available in response to identified needs and to increase competition among suppliers. In fact, to the extent that current markets lack sufficient suppliers to ensure competition, failure to make this type of long term planning information freely available has the potential to perpetuate non-competitive markets.

### ***Availability of similar data***

Data similar to the aggregated summaries is already available, both for the three utilities appealing the aggregation proposal, and for many other public and private utilities throughout the western United States.

Planning area data in particular is readily available. In fact, the Energy Commission and California Independent System Operator have been collaborating to improve the accuracy of information on the regional supply/demand balances within California. While these efforts have primarily focused on the physical system rather than on what resources are under contract to whom, parties familiar with the regional electricity system can use readily available information to develop a good proxy for the resources available to the utilities. For example, the ownership, capacities and operating profiles of utility-owned power plants such as the San Onofre Nuclear Generating Station are well known, and the specifics of the DWR contracts that provide a large portion of each utilities supply through 2010 are public. The utilities also provide public historic and forecast data to the CA ISO, the CPUC, FERC, and EIA. While the data provided in those forums does not exactly match the data under discussion here, it does provide a pool of data for electricity suppliers and their technical consultants to use to approximate the resource positions of the utilities.

In addition, other private and public utilities throughout the western United States make the type of aggregated summary tables proposed by staff publicly available, and some make substantially more detailed information available. Of the publicly owned utilities (POUs) that provided data to the Energy Commission for the *2005 Energy Report* proceeding, only Imperial Irrigation District (IID) requested confidentiality for the detailed monthly supply plans, and IID agreed to the release of

the aggregated summaries as proposed by the Executive Director. While the investor-owned utilities appealing the aggregation proposal operate under different procurement rules, the POUs do largely buy energy and capacity services from the same markets. If any release of this resource data would have the uniformly negative impacts suggested by the IOUs, these POUs would presumably have also insisted on confidentiality of this planning data.

### ***Lack of specificity in aggregated summaries***

The proposed summaries do not provide an adequate level of specificity to be considered a trade secret. Due to the IOU's use of a range of resources to meet need at different times and places within an IOU's planning area, identification of quarterly or annual capacity and energy needs simply does not provide enough information for a potential supplier to derive an economic advantage.

In addition, the energy and capacity data summarized in the aggregated summary tables is only a snap shot of the IOUs' resource balance as it existing in early 2005. All three utilities are in the process of procuring additional resources through one or more mechanisms, such as recent requests for offers from PG&E and SCE and the renewable portfolio standard procurements, that will alter their positions in coming months and years. As the utilities procure additional resources through multiyear contracts and as future demand trends become clearer, the resource balances estimated now by the utilities in their filing for the years 2009 and beyond will shift. Next year's views of the supply/ demand balance for 2009 will most likely reveal lower needs, because the IOU will have acquired contracts or physical resources to partially fill today's understanding of resource need. The utilities also have a degree of flexibility in addressing their long-term resource balance, and are not required to buy (or sell if they have excess) capacity and energy to exactly match their forecast demand for 2009. By the time 2009 approaches and the utilities are required to have adequate resources for that year, their position will have changed significantly.

### ***2000/2001 electricity markets***

The utilities generally argue that release of the detailed data, or the aggregated summaries they are appealing, could result in a return to the market manipulation by electricity generators and wholesalers that occurred in 2000 and 2001. This argument ignores the major changes that have occurred in the California electricity market during the past five years.

In 2000 and early 2001, the utilities were mandated to purchase a large majority of their power from a centralized day-ahead hourly energy market. Supply shortages in this market, for whatever reasons, could lead to greatly inflated costs to the utilities.

In 2005, the utilities serve their loads primarily through utility owned power plants and multi-year bilateral power purchase contracts, including the long-term contracts negotiated by the state during the 2001 crisis. The majority of current power

purchasing by the utilities is through organized request for offer (RFO) solicitations. While some market manipulation is possible in this context, especially in the short term when long lead times for new generation resources means that only existing suppliers can submit bids to provide power in such near term years, the utilities are much less vulnerable than when they relied almost entirely on a day-ahead market.

### ***Applicability of CPUC confidentiality rules***

In addition to their basic arguments about the trade secret nature of the summary data, the IOUs have argued that the Energy Commission's collaboration with the CPUC in the procurement process binds the Energy Commission to follow the CPUC's confidentiality determinations. While similar data has been provided to the CPUC for past proceedings, the data filed by the LSEs for the *2005 Energy Report* proceeding has not itself been reviewed for confidentiality by any other agencies. It therefore falls on the Energy Commission to determine whether this data should be shielded from release under the Public Records Act based on applicable laws and regulations. Even if it were appropriate for the Energy Commission to apply the CPUC's requirements to this data, the CPUC has been directed by legislation to revisit its own approach to confidentiality, and initiated an Order Instituting Rulemaking to do so at its June 30, 2005 business meeting. It would be premature for the Energy Commission to speculate on what confidentiality rules will be in place for the 2006 procurement proceeding.



## **SUMMARY OF QUALIFICATIONS**

- Strong environmental and energy policy experience, especially in energy policy development, power plant permitting, environmental review, and electricity and natural gas infrastructure.
- Strong environmental project management experience with Energy Commission and consulting firms, and strong environmental research management skills developed at U.C. Berkeley.
- Ph.D. (Energy and Resources Group at U.C. Berkeley) with an emphasis on integration of technical information and public participation in the formation and implementation of environmental policy.
- Excellent computer skills, including experience with word processing programs, spreadsheets, statistical software, database programs, graphics and presentation programs. Programming experience in modeling and uncertainty analysis for risk assessments and as a systems programmer.

## **CURRENT EMPLOYMENT**

### **California Energy Commission, since August 2000**

#### **Program Manager, Integrated Energy Policy Report (Energy Commission Specialist II), February 2004 to present**

Leads the management team for the major biennial energy policy report proceeding. Meets regularly with the Executive Director and the Executive Policy Team to inform them of the project's status, discuss resources and other issues, and develop staff recommendations. Meets regularly with the Committee or its members to inform them of the project's status, present staff recommendations, discuss issues, and receive direction. Required to manage a major project and a diverse team of people, communicate well, have a "big-picture" regarding energy issues, understand the Commission organization and culture, and have the ability to integrate multiple issues and subject areas.

#### **Supervisor, Special Projects Unit (Planner III), March 2003 to February 2004**

Directed the work of an interdisciplinary professional staff conducting a wide variety of research and analysis relating to the status and trends in electricity and natural gas. Acted as a leader or member of interdisciplinary teams evaluating the environmental performance of the state's electric generation sector, and in coordinating the role of various state agencies in the permitting of liquefied natural gas facilities. Assisted in developing Commission policy on key environmental and energy infrastructure issues. Represented the Commission before federal, state, and local agencies and interest groups.

#### **Siting Program Manager (Planner III), February 2002 through February 2003**

Directed the work of project managers and professional staff engaged in the complex analysis of power plant permitting. Assisted in developing Commission policy and individual project strategy, including staff's analyses of siting applications. Organized and conducted pre-filing meetings between staff and power plant development teams to discuss the siting process. Represented the Commission before federal, state, and local agencies and interest groups. Recruited, trained, and evaluated project managers to meet the requirements of the siting program.

#### **Siting Project Manager (Planner II), August 2000 to February 2002**

Directed an interdisciplinary staff in review of power plant permit applications, including implementation of the emergency permit process in early 2001. Served as the Commission's principal representative during the permit process for assigned cases. Identified all strategic, technical, and policy issues associated with power plant applications. Critically reviewed, evaluated and edited all project documents, and acted as editor-in-chief and publisher for major project documents. Conducted meetings among staff and between staff and power plant developers, other government agencies, private organizations, and the public.

**EDUCATION****Ph.D. in environmental planning and policy****Energy and Resources Group, University of California, Berkeley, 1996****Dissertation: Local Negotiations in Hazardous Waste Incinerator Permitting:****A Comparison of Economic and Communication Models in Four Case Studies**

Focused on integration of technical information and public participation in the formation and implementation of environmental policy, with emphasis on management of hazardous materials and waste. Course work in public policy, economics, city planning, epidemiology, and toxicology, which complemented prior background in hazardous waste management, computer modeling, statistical analysis, and applied mathematics. Dissertation research evaluated negotiations between local communities and companies seeking to permit hazardous waste incinerators.

**M.S. in environmental technology and policy****Department of Engineering and Policy, Washington University in St. Louis, 1985**

Course work included environmental law, energy technology and policy, statistics, simulation and modeling, international development. Conducted statistical analysis of economic, geologic and other data to predict likely areas of groundwater contamination for master's thesis project.

**B.A. (cum laude) in applied mathematics and computer programming****Department of Applied Mathematics, Harvard University, 1980****EMPLOYMENT HISTORY****Independent Environmental Consultant, 1996 to July, 2000, part time**

Various environmental projects including site assessments and laboratory chemical inventory analysis. For site assessments, evaluated agency records on contaminated sites, conducted site visits, reviewed historical maps, air photos and other historical sources, and prepared reports summarizing evidence of possible environmental concerns associated with the site. For lab chemical inventory projects, analyzed chemical inventories by hazard classification to evaluate building code requirements.

**Environmental Sciences Lecturer****University of California, Berkeley, Fall 1997 through Spring 2000, 50% appointment**

Instructor for the Environmental Sciences Senior Research Seminar, in which students learn how to conduct primary research by undertaking an independent research project on a topic of current environmental interest. Shared responsibility for overall class of approximately 50 students with another lecturer and teaching assistants, with primary responsibility for advising one-fourth of the students.

**Program evaluation research****U.C. Toxic Substances Research & Teaching Program, 1998 to 1999, half-time appointment**

Evaluated impact of TSRTF's funding of research at the University of California through surveys and interviews of students and post-docs funded by the program examining the use of research findings and the development of the careers of those funded.

**Waste management planning services****Brown, Vence & Associates, 1990 to 1993 (part time)**

Prepared Hazardous Waste Management Plans for two California cities. Plans included current estimates and projections of hazardous waste generation, estimation of potential for waste minimization among local companies, analysis of the need for facilities to manage locally generated waste, and development and preliminary evaluation of criteria for siting treatment and disposal facilities.

**Risk assessment, Superfund site investigations, and computer modeling services****EBASCO Services, Inc., 1985-88**

Managed two tasks of the investigation of hazardous waste contamination at Rocky Mountain Arsenal (RMA), with a budget of \$1.5 million, starting in September 1987. These tasks

investigated possible soil and groundwater contamination by chlorinated solvents, pesticides, Army Chemical Agents, and related compounds in 11 discrete sites and portions of 12 square-mile sections. Earlier duties included risk assessments for RMA, municipal waste incinerators, and other projects, development and use of software for uncertainty analysis of risk assessments, and regulatory interpretation and guidance.

### **Systems programming**

#### **CL Systems, Inc., 1981-83**

Supported and updated the CLSI operating system, which supported computerized library check-in and check-out operations, catalogue database systems, and other library-related systems. Duties also included evaluation of disk subsystem controllers and customer contact during new software releases.

### **Community organizing**

#### **Association of Community Organizations for Reform Now (ACORN), 1980**

Worked in Boston to help establish new neighborhood groups associated with ACORN, a national network of community organizations. Supported existing neighborhood groups, including research assistance and coordination of actions by group members on issues of local and citywide concern.

## **FOUNDATION EXPERIENCE**

### **Switzer Foundation**

Served on the selection committee for Switzer Leadership Grants in 2000. These grants are provided to organizations for projects that involve Switzer Fellows in a substantive role in order to give non-profit organizations, educational institutions, and government agencies access to individuals with superior technical and scientific expertise while advancing the professional careers of Switzer Fellowship alumni.

Served on the selection committee for the Switzer Fellowship Grants in 1997 and 1999. These grants are provided to graduate students who demonstrate significant career potential for improving the quality of our natural environment.

## **FELLOWSHIPS AND AWARDS**

California Energy Commission Superior Accomplishment Award, 2001

NIEHS Superfund Research Grant Trainee, 1992-94

University of California, Berkeley, Provost Research Fund Award, 1993

Society for Risk Analysis Student Travel Grant, December 1993

Switzer Foundation Environmental Fellowship, 1989-90

Jacob and Mary Kemler Seitz Fellowship, 1988-89

## **TEACHING EXPERIENCE**

**U.C. Berkeley**, Fall 1997 through Spring 2000: Lecturer, Environmental Sciences Senior Research Seminar

**California State University, Hayward**, Winter 1996: Lecturer, Energy Resources and Management

**U.C. Berkeley**, Spring 1996: Graduate Student Instructor (GSI), Introduction to Environmental Science

**U.C. Berkeley**, Fall 1994: GSI, Environmental Sciences Senior Research Seminar

**U.C. Berkeley**, Spring 1990 and Spring 1991: GSI, Quantitative Aspects of Global Environmental Problems

**Washington University**, Fall 1984: Teaching Assistant, Energy and Human Affairs

**Harvard University**, 1979-80: Course Assistant, Introduction to Calculus

## **PAPERS AND PRESENTATIONS**

*Kennedy, Kevin M.* "Local Dynamics in Negotiations over Hazardous Waste Incinerators," presented at the Annual Meeting of the Association for Public Policy Analysis and Management, Pittsburgh, Pennsylvania, October 1996.

*Kennedy, Kevin M.* "Local Negotiations Over Hazardous Waste Facility Permitting: Effects of Local vs. State Authority," presented at the Annual Meeting of the Association for Public Policy Analysis and Management, Chicago, October 1994.

Koshland, Catherine P., Rosen, Christine Meisner, and *Kennedy, Kevin M.* "Barriers to Hazardous Waste Minimization by Small Generators," poster presentation at the 8th Annual Research Symposium, University of California Toxic Substances Research and Teaching Program, San Diego, October 1994.

*Kennedy, K.M.* "Risk Communication and Facility Permitting: Responding to Public Concerns," presented at the Annual Meeting of the Society for Risk Analysis, Savannah, GA, December 1993. (Awarded Student Travel Grant for this submission.)

*Kennedy, K.M.* "Public Participation and Facility Siting: What is Success?" presented at the Annual Meeting of the Society for Risk Analysis, Savannah, GA, December 1993.

*Kennedy, Kevin M.* "Public Participation and Facility Proposals: Broadening the Scope of Technical Review," student poster presentation at the 86th Annual Meeting of the Air & Waste Management Association, Denver, CO, June 1993.

Irons, L., *K. Kennedy*, C. Haddox, T. Sindelar, D. Borrelli, and C. Scharman. "Successful Geophysical Techniques Used at Rocky Mountain Arsenal and Confirmation of Soil Gas Studies with Groundwater Monitoring," EBASCO Services and Rocky Mountain Arsenal Contamination Cleanup, U.S. Army, September 1988.

Darby, W.P. and *K.M. Kennedy*. "Predicting Areas of Ground Water Contamination," Environmental Engineering: Proceedings of the 1985 Specialty Conference, Sponsored by the Environmental Engineering Division of the American Society of Civil Engineers, ASCE, NY, NY (1985).

#### **PUBLICATION EDITING**

*Kennedy, Kevin*, Tom Dudley, Caryl Waggett, Donna Green, and Astrid Scholz, editors. *Exploring the Environment: Research for Environmental Management*. Senior Research Seminar, Environmental Sciences Major, University of California at Berkeley, May 2000.

Dudley, Tom, *Kevin Kennedy*, Astrid Scholz, Anna Steding, and Caryl Waggett, editors. *Upstream, Downstream: Living in the Watershed*. Senior Research Seminar, Environmental Sciences Major, University of California at Berkeley, May 1999.

Dudley, Tom and *Kevin Kennedy*, editors. *Environmental Science: Policy and Practice*. Senior Research Seminar, Environmental Sciences Major, University of California at Berkeley, May 1998.

**References available upon request**

## **Testimony of Michael R. Jaske, Ph.D.**

### **1. Overview**

In this testimony, Energy Commission staff member Michael Jaske refutes the IOU appeals opposing a portion of the Executive Director's annual and quarterly aggregation proposals for resource plan data filed by LSEs. The testimony describes the disputed aggregated summary tables and the underlying confidential data and demonstrates why the IOUs err in claiming that release of these summary tables will cause them to lose a competitive advantage. Two perspectives are used.

First, we show that despite IOU claims about the harmful consequences of the release of the proposed aggregated summary tables, the conventional standard for documenting resource needs around the West is for utilities themselves to release at least as much information as has been proposed by the Executive Director in his June 3, 2005 Notice of Intent (proposal). It is common practice for utilities to make public the entire body of data that the IOUs originally requested confidentiality as a trade secret. In addition, we show that despite IOU claims, much of the data they propose to withhold from public disclosure is already known to the energy industry. Some of the data is known exactly, as a result of regulatory filings to other agencies. For other data variables the IOUs themselves publish close analogues, which allow sophisticated analysts to "estimate" the values the IOUs seek to withhold.

Second, the companion testimony of expert consultant Julia Frayer of London Economics International addresses the flaws of the experimental economics analyses put forward by Southern California Edison (SCE) as the principal support for its rationale, and demonstrates that release of the aggregated summary tables will lead to lower, not higher, prices.

#### **A. A portion of proposed aggregated summary tables are under dispute.**

This testimony addresses the issue of the release of aggregated summary tables derived from resource planning data filed with the California Energy Commission (Energy Commission) pursuant to Supply Forms and Instructions adopted as part of the Integrated Energy Policy Report (IEPR) process in February and March 2005.<sup>1</sup> Eighteen load-serving entities (LSEs) filed a resource plan, and the three investor-owned utilities (IOUs) filed a base case or "reference" resource plan and several alternative scenarios as well.<sup>2</sup>

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<sup>1</sup> 2005 Supply Forms and Instructions were adopted in two parts. Requirements covering a "reference case" were adopted on February DD, 2005, and a supplemental set of Supply Forms and Instructions were adopted on March DD, 2005. The filings pursuant to these requirements were due from LSEs March 1, and April 1, respectively.

<sup>2</sup> A load-serving entity is one with an obligation to sell electricity to retail customers. LSEs include municipal utilities, such as SMUD or LADWP, which are publicly owned and governed by a Board of Directors; Investor-owned utilities (IOUs), which are privately owned, but regulated by the California Public Utilities Commission and guaranteed certain types of cost recovery; and energy service providers

Among the data filed were monthly projections of electricity supply by specific resource type (e.g., utility-owned generation by type of generating technology, and different categories of contracts by type of generating technology.) When the IOUs provided this data, they requested that it be designated confidential, pursuant to the Energy Commission's confidentiality regulations. This request was granted on March 30, 2005. However, in order to provide Commissioners, other state agencies, and members of the public participating in the IEPR process with access to information on which the Energy Commission will be basing its finding and conclusions, the Executive Director subsequently evaluated whether aggregations of the confidential data would prevent the disclosure of the confidential elements of the data, while allowing some public review of LSE's energy supply situation. (Aggregation is commonly-accepted from of protecting confidential data, and is explicitly identified as such in the Commission's regulations governing disclosure of information.) After considering several options, the Executive Director issued an aggregation proposal in which the IOU supply data was aggregated in two different ways. First, the monthly data were combined to create quarterly and annual summaries. Second, the individual resources that were identified were collapsed to resource categories, thereby masking most individual suppliers. For the large IOUs, this typically means reduction from up to 100 individual resources to about 15 resource categories. Ten specific aggregations were proposed, four of which included data only for each IOU's "bundled customers" (those who purchase electricity from the IOU), and six of which included data for all the customers within an IOU's planning area (bundled customers plus customers who obtain their electricity by means other than the IOU but use the IOU's electricity distribution system to receive the electricity.) The specific proposal identified the following categories of aggregated data:

- 1) Bundled customer annual capacity
- 2) Bundled customer quarterly capacity
3. Bundled customer annual energy
4. Bundled customer quarterly energy
- 5) Planning area annual capacity
- 6) Planning area quarterly capacity
- 7) Planning area annual energy
8. Planning area quarterly energy
- 9) Planning area annual range of capacity
- 10) Planning area quarterly range of capacity

All thee IOUs opposed 1 and 2, PG&E and SCE opposed 4, SDG&E and PG&E opposed 6, and PG&E opposed both 8 and 10. Staff has subsequently withdrawn its proposal for 10, leaving 1, 2, 4, 6, and 8 at issue in these appeals.

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(ESPs), which are private companies serving load and which do not own their own transmission, or electrical distribution systems and which typically purchase power from individual generators and transmit the power over the transmission and distribution lines of the IOUs and municipal utilities. Resource plans consist of an identification of the types and quantities of resources that an LSE proposes to use to meet customer demand over some specified time frame. In this IEPR, resource plans were provided for the years 2006 to 2016.

**B. The aggregated summaries, if not resource plan data themselves, are essential to electricity planning in California.**

The resource plan data (aggregated summaries of demand forecasts, identification of specific resources available to meet those demands, and the net difference between supply and demand for a specified time interval) are planning data. They are commonly used to characterize the utility's resource situation looking out years into the future. The long time period needed to plan, permit and construct power plants and to implement various types of energy efficiency and demand response programs necessitates a multi-year view of the future. Typically, these data will show that the LSE has covered its load in the near term and that it has not yet made commitments to cover all of its load in the intermediate or long-term period. Thus, there is some degree of resource need, typically increasing through time.

The electricity planning process is designed to understand the size of this "gap" and to examine whether there are policy preferences for influencing how it should be filled. Comparing and contrasting alternative options requires an understanding of the differential costs over the lifetimes of these alternatives, and how they might operate as part of a portfolio of resources satisfying customer demand. Regulatory agencies with oversight authority over utilities and other LSEs commonly require such resource plan data to be submitted for review either periodically as part of an integrated resource planning process, or in establishing a foundation for procurement practices that are sanctioned or proscribed by the regulatory agency as a matter of public policy. In addition, these data provide important market signals to potential generators who may seek to meet an identified electricity resource need. As a matter of public policy, the Energy Commission believes such planning processes must be conducted with the input of the public. The aggregated summary tables proposed by the Executive Director allow the resource plan data to be released in a sufficiently aggregated form to protect trade secrets, yet in a sufficiently disaggregated form to allow an informed public policy debate.

**2. The IOUs have failed to support their assertions of harm.**

The IOU assertions that harm will come to their bundled service ratepayers through the release of the disputed data are misguided. They claim that release of this data will allow suppliers to charge the IOUs higher prices for electricity than they would be able to absent the information. In order to support this claim, they draw analogies between the current electricity market and 1) market structure used in Dr. Charles Plott's experiment (included in SCE's filing); 2) the market structure in effect leading up to the 2001 – 2002 energy crisis; and 3) a poker game or a football huddle. In doing so, the IOUs ignore a number of crucial distinctions between those diverse situations and the current market structure. They also ignore the protections provided by the Executive Director's aggregation proposal, which shields individual resources, excludes the first three years, and provides much less specificity than the confidential data. Finally, they ignore the

economic benefits that will accrue to ratepayers – whom they claim to be protecting – if data that provides appropriate investment signals is made available to suppliers.

**A. Other Utilities in California and the West provide access to their resource plan data.**

The aggregated summary tables which the IOUs claim need protection are commonly available from many utilities located within the Western Interconnection.<sup>3</sup> Such summaries or even the resource plan data itself are made available by all kinds of utilities, large and small, public and investor-owned, those with supply/demand surplus and deficits. In fact, these data were prepared and publicly submitted on a regular basis to the Energy Commission from 1975 to 1997 as part of the Biennial Report and Electricity Report proceedings.<sup>4</sup> <sup>5</sup>Historically, public distribution of these data has been the norm, and secrecy during the period between 1998 and 2004 is the aberration.

**i. Other California load serving entities have provided access to their resource plan data.**

Twenty-one load serving entities provided resource planning data to the Energy Commission as part of the *2005 Energy Report* proceeding. They consist of five energy service providers (ESPs), three investor-owned utilities (IOUs), and 13 publicly-owned utilities (POUs). Four of the five ESPs requested confidentiality of the detailed monthly, resource specific data. All three IOUs requested this same confidentiality. One of the 13 POUs requested such confidentiality.

In response to the Executive Director's planning area aggregation proposal (which includes confidential data provided by all three types of LSES), every single ESP and POU agreed to have their data aggregated and published as part of planning area annual and quarterly tables. Only the IOUs objected. Clearly the great majority of the POUs do not believe even the full detailed monthly, resource-specific data itself needs confidential treatment. As competitive businesses with only very limited financial oversight by state or federal agencies, the ESPs naturally sought protection for their detailed data, but were willing to have aggregated summary tables based on their data reported as part of planning area results that the IOUs have opposed.

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<sup>3</sup> The Western Interconnection (WI) consists of the majority of the area of 11 Western States, the provinces of British Columbia and Alberta in Canada, and portions of the northern portion of Baja in Mexico. The electrical grid covering this entire area is physically interconnected and power flows anywhere according to the laws of physics. Various formal markets and informal power supply contracting processes exists among utilities in the WI.

<sup>4</sup> Energy Commission regulations, Title 20, Division 2, Chapter 3, Article 2, Section 1347 require LSEs to submit resource plans on a biennial basis using forms and instructions to be adopted by the Energy Commission each biennial cycle.

<sup>5</sup> SB 1389 (Chapter 568, Statutes of 2002), among other changes, modified sections 25300-25326 of the Public Resource Code and re-established a biennial planning process to culminate in a policy report to the Governor and legislature.



## **ii. Major utilities around the West provide access to their resource plan data.**

Table 2 provides a summary of the resource plan disclosure policies of nine major western IOUs. For each utility, Table 2 summarizes the extent of disclosure of demand forecasts, existing and planned resources, and resource need. Internet websites are provided to demonstrate the public access to these materials. (Appendix A provides more detail about the resource planning information available for five major IOUs around the West.) All of these utilities disclose as much or more resource plan information than what the Executive Director proposed for annual or quarterly summaries. In some instances, such as the monthly data, the utilities disclose much more detail than what the Executive Director has proposed to disclose.

Arizona Public Service (APS) provides annual energy and capacity summaries of its system load, its resources, and the net surplus or deficit position. These data were published as part of a long-term contract solicitation, so it is obvious that APS intended the generator community to acquire and consider these data in preparation of bids. APS also provides monthly energy data for categories of resources and monthly resource need, which is more information than the Executive Director proposes to disclose.

Idaho Power provides details of its resource surplus or deficit position on a monthly basis for both energy and capacity for 2004 – 2013. Idaho Power explicitly shows graphs of these monthly surpluses or deficits, which range from considerable deficit to considerable surplus across the months in any specific year. Idaho Power also provides the demand forecast and resource plan detail to substantiate these resource surplus or deficit results. By providing monthly resource balance summaries and annual resource-specific information, Idaho Power provides more detailed information than the Executive Director has proposed to disclose.

PacifiCorp has provided a great detail about its 2003 and 2004 integrated resource plans (IRP) in public documentation posted on its website. PacifiCorp provides all of the information contained in the annual aggregated summary tables for each of its two electric systems – the western one centered in Oregon and the eastern one centered in Utah.

In their objections to the preliminary proposal of the Executive Director's IOU bundled customer-specific aggregated capacity tables, the three IOUs expressed concern that revealing bundled customer versus total service area loads would reveal the extent to which the IOUs predicted loss of load from community choice aggregation or municipalization, direct access, or core/non-core market structures.<sup>6</sup> Revealing loss of load from these means is not uncommon in those jurisdictions where customers are provided choice. Portland General Electric, Puget Sound Energy, and Northwestern all identify loss of traditional utility load to other retail suppliers.

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<sup>6</sup> SCE Appeal, Appendix 2, page 5-of-6.

**iii. Practices of these other utilities indicate that withholding resource plan data does not maintain an economic advantage for IOU ratepayers.**

The practices of these other California utilities and out-of-state utilities are directly relevant to the issues the California IOUs have raised. The California POUs and the other utilities around the Western Interconnection purchase from the same market as do the utilities who protest disclosure of aggregated long-term summaries of planning data. If the claims of the California IOUs about the harmful consequences that disclosure would cause were true, these other utilities would also suffer economic harm, and would likely be withholding their own long-term planning data. They are not. The claims of harm made by the California IOUs, and hence the claim that the aggregated tables are trade secrets, simply are not supported by the actions of these other entities.

**B. IOUs themselves provide similar data in other planning forums and to the federal government.**

In making their March 1 and April 1 filings of Supply Forms and Instructions to the Energy Commission, the IOUs themselves developed a variant of the annual, resource category energy summary table proposed by the Executive Director and offered these for public release. These public S-2 forms would have provided considerable amounts of aggregated energy summary information to the public. Since long-term energy to capacity relationships for most classes of resources are reasonably stable, revealing energy information provides a strong basis for knowledgeable energy experts to “estimate” the aggregate capacity of these resources and any supply/demand gap.

As part of their transmission planning responsibilities, IOUs disclose load forecasts as part of the annual CAISO grid planning process. All three IOUs disclose annual planning area peak demand forecasts under 1:10 weather conditions. The relationships between loads under 1:10 weather and loads under 1:2 weather can be guesstimated.<sup>7</sup> As part of a March 21, 2005 public workshop on summer 2005 supply-demand balances, the Energy Commission published data for precisely these values for the months of June through September, and IOUs in their comments at the workshop provided their own peak demand/weather assessments that could be used by experts to “reverse engineer” peak demand forecasts. The relationship between planning areas to bundled customer load are easily “guesstimated” to a few percentage points.

In addition, all three IOUs are obligated to file various FERC forms each year. Among these are FERC Form 1 requirements that monthly capacity and energy for their systems be released. PG&E, SCE and SDG&E filed these data for calendar 2004 in the spring of 2005. These data are available from FERC via its website or from the IOUs themselves from their own websites. These monthly data show patterns that are reasonably stable through time and that can be used to convert from energy to peak demand or to

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<sup>7</sup> In materials distributed by email on July 6, 2005 to all participants in its 2005 transmission planning process, SCE distributed a chart that provides the annual peak demand forecast under 1:2, 1:5, and 1:10 weather conditions. For SCE, no “guesstimating” is needed.

disaggregate from annual to monthly. This is the sort of “data mining” that numerous consultants routinely conduct for their clients.

All utilities greater than 200 MW peak demand are also obligated by FERC to provide annual energy and seasonal winter/summer peak demand forecasts out ten years as part of the annual FERC Form 714 filings.<sup>8</sup> PG&E has continued to file these data through 2004, although SCE and SDG&E seem to have shirked this obligation with no enforcement action yet from FERC.

In light of these disclosures, it is naïve to believe that the generator community does not already have approximate knowledge of these very matters. Those in the industry with detailed knowledge of utility resources make sophisticated estimates about the energy to capacity relationship of the data that have been already revealed. This allows the generator community to make informed approximations of the specific capacity summaries that the IOUs seek to protect. If the rewards are so large that generators can reap millions of dollars of financial gain from abusive market power using the aggregated summary tables that the Executive Director proposes to release, then the generator community will have already invested tens or hundreds of thousands of dollars to hire consultants to ferret out any and all data that exist and to infer that which cannot.<sup>9</sup> Because recent past, current, and near-term data are much more critical to the power marketing community, whole firms have sprung into existence just to assemble and distribute power plant operating information.<sup>10 11</sup> Thus, the IOU-specific data that the Energy Commission proposes to release is at best a modest improvement over the inferences that the generator and energy consulting community have already developed.

### **C. Release of aggregated summary data will not lead to a repeat of the conditions of 2000-2001.**

IOUs have asserted that the Energy Commission proposal could contribute to a repeat of the difficult times of 2000-2001, in which prices were high, generators were accused of cheating IOUs and/or the State of California, and the system neared collapse on several days. This assertion is completely unsupportable.

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<sup>8</sup> FERC Form 714, Part III, Schedule 2.

<sup>9</sup> For example, Henwood Energy Services offers anyone with the license fee access to a production cost simulation model that covers the entire Western interconnection. The model simulates the performance of the overall system including the resource-specific energy and capacity of every resource included within the IOU resource plans. The model makes projections on an hourly basis many years out into the future. The results can be aggregated into any form of table, including ones that nearly exactly match those proposed by the Executive Director. While these simulated results might not exactly match the data the IOUs seek to protect, they would be fairly close.

<sup>10</sup> Genscape is a commercial firm that has installed remote monitoring equipment outside of power plant fences to collect real-time information about individual facilities that is marketed as part of a real-time monitoring system for power traders, buyers and sellers. See <http://www.genscape.com/na/power.shtml>

<sup>11</sup> The U.S. Environmental Protection Agency collects hourly production data for all thermal power plants using continuous emission monitoring devices. This data is widely used to track power plant performance by the energy industry.

In 2000-2001, IOUs were required to purchase from a central power market that operated a Day-Ahead hourly energy market. IOUs and other LSEs bid in their loads, and generators bid in their supplies. A market clearing price was determined by these bids. Shortages of supplies, whether from adverse hydroelectric conditions in the Northwest or abuses of market power by generators could lead to high market prices. Since a large majority of IOU purchases were from this market, overall generation costs were tied closely to these market prices. If hourly energy prices increased, average energy costs increased with little lag. Beginning in June 2000 and continuing until a FERC order halted this market system in June 2001, insufficient bids drastically increased prices, hence costs, and essentially bankrupt the three IOUs, forcing the State of California to purchase on behalf of IOU customers. Then, attempts by the State to control lower short term prices by entering into long-term contracts resulted in high-priced long-term contracts. Finally, FERC controlled market prices by ordering all generators to offer power into the market and installed a market price cap.

In contrast, in 2005, the vast majority of IOU generation comes from power plants they own or from multi-year power purchase contracts. The Day-Ahead energy market run by the Power Exchange no longer exists, and the Power Exchange itself exists only as a bankrupt organization handling financial settlements of funds transferred to it as a result of FERC orders and court decisions. There is no organized Day-Ahead energy market, but there are a few thinly traded, standardized contract forms that allow for a limited degree of price discovery for bilateral contracts. Aggregate statistics from these markets are reported in the trade press. The CPUC does not allow the IOUs to purchase more than 5% of capacity needs from the spot market. The vast majority of IOU power purchasing is through long-term contracts resulting from organized request for offer (RFO) solicitations. Thus, the IOUs have a wide range of options for meeting demand, from short term-contracts to long-term contracts. The prices paid under these contracts can be fixed, or they can be cost-based. Delivery can be taken at different points within the IOU distribution system. Finally, the IOUs can develop and implement energy efficiency and demand reduction programs to affect the level of energy and capacity needs.

Another crucial distinction is the Energy Commission's efforts to release some degree of forward planning information. Unlike 2000-2001, when the IOUs did not provide any forward supply/demand balance information to other market participants, the Energy Commission is attempting to release and make widely known much information about supply/demand balances so that all participants in the market can understand and react to market conditions. LSEs can create a portfolio of contracts knowing the overall market balance. Generators can understand the likely economic effects of developing new resources and can bid projects with start dates several years into the future with some assurance that they will have a market for their product and can recoup their investment.<sup>12</sup>

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<sup>12</sup> An extensive discussion at the July 7, 2005 *2005 Energy Report* Workshop on Electricity Issues and Policy Options about the 8,000 MW of permitted, but unbuilt, power plants in California, centered on the need for these developers to obtain long-term contracts. A "site bank" of permitted, unbuilt facilities can be helpful to maintaining supply/demand balance since these can be built and operating much more quickly than starting from scratch. One participant noted that developers might be willing to go through the

As will be explained in more detail in the companion testimony of Julia Frayer of London Economics International, the provision of this planning information that the Executive Director has proposed and that the IOUs oppose, is precisely what the market needs to operate most efficiently and at the lowest sustainable cost over the long term. These long-term effects will benefit ratepayers – the same ratepayers whose economic interest the IOUs claim to be protecting in designating this data a trade secret.

### **3. General comments on the IOU claims that the proposed aggregated summary tables are trade secrets.**

The issue to be decided as a result of the IOU appeals to the Executive Director's aggregation proposal is not whether there are grounds for agreeing that some LSE resource plan data are trade secrets, since the Executive Director has clearly agreed to provide such a designation in numerous determinations, but whether the aggregated summary tables computed from the IOU data are themselves trade secrets.

#### **A. Monthly, resource specific data are trade secrets and will not be exposed by the aggregation proposals.**

As a result of requests for confidentiality for March 1 and April 1 resource plan filings, the Executive Director determined that each and every LSE's confidentiality request for the data submitted on forms S-1 and S-2 should be granted.<sup>13</sup> This means that monthly, resource specific data on the forms is confidential for the three IOUs, the four ESPs, and the single POU that made such requests. The equivalent data for the one ESP and the 12 POUs that did not make such requests is not confidential and is available to the public.

However, in order to permit the public to participate in the 2005 Energy Report proceeding, the Executive Director proposed that aggregations of the confidential resource plan data be made and released. First, the staff carefully evaluated what level of aggregation would protect the confidentiality of the underlying data. Staff first made an informal proposal, and offered the LSEs the opportunity to comment on the proposal in person and in writing. A formal proposal was issued on June 3, 2005. This proposal include several different aggregation proposals that condensed the monthly, resource specific data to quarterly or annual, resource category summary tables along with two different ways of groupings of LSEs together. IOUs and some ESPs responded to the proposal on June 17. The single POU responded favorably on June 23, 2005.

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licensing process on the basis of supply/demand projections, but construction itself would require a long-term contract.

<sup>13</sup> Each of the LSEs making confidentiality requests for resource plan data also made requests for other types of data that the Supply Forms and Instructions required LSEs to provide. An example are the Form S-5 data that requires substantial detail about each bilateral contract. LSEs requested and the Executive Director agreed that these contractual details constituted trade secrets. The aggregation proposals of the Executive Director made no attempt to release these data, even in aggregated summary form, because they are not necessary to form a general understanding of the loads, resources, and net short/long position of the LSE in order to support a public process to identify overall resource needs and resource preference policies.

Table 1 provides an overview of the six proposals and the IOU responses. In their comments, IOUs generally assert that IOU bundled customer capacity tables would reveal too much to potential suppliers, and thus even these aggregations are trade secrets that should be protected to avoid adverse consequences to bundled service ratepayers by higher bid prices than would otherwise be submitted. Annual capacity for IOU bundled service loads and quarterly data in almost any form finds objection from one or more IOU. The IOUs did not coordinate their final responses, and the three rationales seem to be at least partially contradictory.<sup>14</sup> This table also indicates which of the proposed aggregated summary tables have now been published and released to the public.

## **B. Poker game and football huddle analogies are simplistic and misleading.**

In an attempt to create analogies that represent a simplified picture of the information disclosure issues under dispute here, SCE's witness Plott and SCE witness Cini create analogies of poker games and football huddles. Plott asks why one would play a poker game in which one was asked to lay down his cards while all other players could keep theirs' secret. [Plott Declaration, p. 3, lines 10-14] Cini asks how successful one would be if your football team invited the opposition into the huddle on each play. [Cini Declaration, p. 6, lines 23-28] These analogies have nothing to do with electricity markets and mislead more than they inform.

The three IOUs are the largest California purchasers in a western power market that involves about 25 other California utilities, about 15 California ESPs, and dozens of utilities serving other parts of the West. There are 10 or more private generating companies and 60 or more utilities making various kinds of power sales arrangements, spot, mid-term, and long-term. As is documented in Table 2 and Appendix A, the majority of the major IOUs other than the three California IOUs disclose as much or more than the aggregated summary tables proposed by the Executive Director. The vast majority of POUs, both large and small disclose these same planning data. Just as California IOUs are not unique in their exposure to retail competition, Portland General Electric, Puget Sound Energy, and the western portion of PacifiCorp are as reliant upon contracts as are the California IOUs.

The Western power market is not a poker game with 4-7 players. It is not a football game with two players. It is more like a farmer's market in which one comes back week after week to purchase vegetables from a large group of suppliers, some of which have specialized products and some of which compete directly with one another to sell identical products to customers. General information about the size of one family being purchased for versus the size of another family being purchased for becomes obvious to

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<sup>14</sup> For example, both PG&E and SCE have considerable hydro-electric generating assets, but SCE was willing to provide quarterly energy data revealing its planned use of these assets, while PG&E was not. PG&E is likely to be more dependent upon this kind of resource. At what point does the prominence of a resource category justify withholding planned usage information about from the public? If one were to assume that SCE and PG&E have similar rationales for identifying planning data that constitutes a trade secret, then the degree to reliance upon hydro-electric generation creating a trade secret is evidently somewhere between the levels that SCE and PG&E have.

the sellers over time. Further, the purchaser can go from one market bazaar to another, perhaps incurring some transportation cost that offsets lower prices for the products. A purchaser can also enter into a long-term arrangement with an organic farmer who will deliver specialized products to the door to satisfy a portion of the purchaser's needs. The purchaser may also have garden space in which he is raising a portion of his needs, which can at least partially substitute for making purchases from others, both in the short-term and in the long-term. Finally, the purchaser can evaluate whether some of the purchased food is wasted, and if so, reduce the amount of food purchased. Completing this analogy, the Executive Director's proposal is like the mayor of the town deciding to release the size of the three largest families, and the population of each block. Such population summaries have some correlation with food consumption, but do not give suppliers information that allows them to charge higher prices for their products.

Simply put, the market in which this information disclosure might influence outcomes is vastly more complex than the simple analogies of the poker game and football huddle. These analogies are completely misplaced. These are cartoonish distortions of the complexities of the electricity market place.

#### **4. Specific comments on the IOU claims that the proposed aggregated summary tables are trade secrets.**

##### **A. Appeals by IOUs of bundled customer energy and capacity proposals**

In this section, Energy Commission staff examines the various aggregated summary table proposals that the IOUs have appealed. The perspective offered is largely focuses on whether the proposed aggregated summary tables are similar or dissimilar to what other IOUs in the Western Interconnection and POUs in California readily publish, and whether the data is specific or accurate enough to influence bidding. The companion testimony of Julia Frayer of London Economics International examines the IOU appeals from the perspective of theoretical economics. Both of these perspectives refute the IOU assertions that these aggregated summary tables are trade secrets that can be shielded.

##### **i. Refutation of appeals of IOU bundled customer annual capacity tables**

The three IOUs all appealed release of an IOU bundled customer annual capacity table. They assert that release of the single annual resource need value (sometimes called residual net short) will be used by generators to game bids and will cause bundled customers to pay more for generation. [Plott Declaration, p. 2, lines 20-21] For three reasons, Staff believes this is not likely to be true.

First, an annual capacity table showing loads, various categories of resources, and the residual net short on a capacity basis is commonly released on utility website around the West. These utilities and numerous others purchase a portion of their requirements from the same generator community that the California IOUs purchase from. The 13 POUs in California that either did not request confidentiality at all or were willing to have resource

plan data released in this form apparently do not have the same concerns release of this data will put them at an economic disadvantage.

Second, while the annual resource need (or RNS value) for each IOU does provide an indication of the magnitude of resources that the IOU must acquire as of the date of preparation of the resource plan, it is not updated as an IOU takes procurement actions to acquire new resources or to replace existing resources until the next cycle of the planning process and it is revised and submitted. As a result, it is increasingly inaccurate as time goes by. It does not provide any direct indication of how much an IOU will need to acquire in any one contract or even in any one solicitation of bids. It does not define the duration of the contract term that the utility wishes to acquire through new contracts or the location at which the electricity will be delivered. Rather than total capacity that must be in place for the summer of 2009, it is the details of the products the LSE wishes to acquire that actually influences how the generator will prepare and submit bids. An estimate of the total amount of resources for the peak hour that will be procured from a whole variety of solicitations of various different products does little to affect how generators bid in any one of these solicitations.

In addition, the Figure 2 put forward by Plott is misleading in that it suggests that the following simple sequence would take place:

- (1) Energy Commission release of aggregated planning tables,
- (2) IOUs announce RFO mechanisms to obtain bids,
- (3) collusion by bidders results in higher prices being offered, and
- (4) IOU forced by CPUC procurement requirements to accept high priced bids.

In actuality, from the summer of 2005, when the aggregated summary tables might be released to summer 2009, when the resources need to be in place, each IOU is likely to have sponsored 3-6 different RFOs and received responses to multiple cycles of offers. There are many opportunities for the IOU to procure specific kinds of products and to determine for themselves whether to announce a procurement target for a specific RFO, whether or not to take any of the bids offered, or even to reject all bids and pursue other resource strategies. As far forward as 2009, IOUs are authorized to and capable of proposing to construct IOU-owned generation or to create and/or expand IOU customer demand response programs. Both of these alternatives to generator contracts are allowed by CPUC procurement rules.

Third, Plott asserts that knowledge of the “resource need” gap “...reveals almost exactly how much capacity the IOUs must buy from suppliers.” [Plott Declaration, p. 2, lines 20-21], and this will cause suppliers to bid higher by holding back. SCE Appeal, Figure 2 in Exhibit C, is designed to make his point. [Plott Declaration, p. 4, lines 12-17] Staff disagrees that this is the likely outcome for aggregation summary tables that identify either annual or quarterly “resource need.”

Under the procurement authority granted to IOUs by CPUC D.04-12-048, IOUs have been directed to procure a portfolio of resources to satisfy their customer’s needs and a 15-17% planning reserve margin over and above peak demand. The CPUC’s resource



adequacy requirements extend out only one year ahead, so in the fall of 2005 LSEs will be procuring to this standard for the months of June 2006.<sup>15</sup> While the CPUC expects IOUs to move in the direction of longer term forward commitments, there is no obligation to do so at any price. In fact, D.04-10-035 establishing resource adequacy requirements explicitly allows IOUs to defer purchases needed to satisfy the 15% planning reserve requirements if they believe that the bid prices offered are excessive.<sup>16</sup> Thus, for the period beginning 2009 out to 2016, which is the time period in dispute resulting from the IOU appeals, the assertions of Plott and Cini are unsupported by the CPUC procurement rules. There are no mandatory purchase requirements that far forward.

For these reasons, the Energy Commission staff does not believe that the IOUs have demonstrated that this aggregated annual capacity summary table meets the definition of a trade secret.

## **ii. Refutation of appeals of IOU bundled customer quarterly capacity tables**

The three IOUs all appealed an IOU bundled customer quarterly capacity table. They assert that release of the values for the four quarterly resource needs (sometimes called residual net short) will be used by generators to game bids and will cause bundled customers to have to pay more for generation. Since one of these four quarterly tables will be identical to the annual capacity table, then release of the quarterly table creates the same harm as the annual table, and perhaps a bit more from release of the three other quarterly tables.

Energy Commission staff agree that quarterly capacity tables are inherently more damaging than annual ones. Since products on the market are based on calendar quarter terms, the differences in the four quarterly capacity tables could be construed to indicate the incremental purchases from one quarter to the next. For example, by subtracting the second quarter value from the third quarter value, one can obtain the increment of capacity needed for the third quarter over and above that needed for the second quarter. However, there are at least two reasons such estimates are a poor indicator of actual purchases.

First, the “delta” computation described above reflects the change in total capacity requirements between the two calendar quarters. An IOU with a portfolio of contracts is likely to have some expiring at any point in the year. Thus, the minimum purchase that could be expected for a third quarter is the increment just for that quarter and the total amount of expired contracts being replaced. If the aggregation proposal revealed individual contracts there taking these expirations into account could be factored into RFO bids. However, the Executive Director proposal does not release resource data

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<sup>15</sup> The resource adequacy requirement is actually even less binding. On a Year-Ahead basis, LSEs must only demonstrate that they have acquired 90% of the resources necessary to satisfy peak demand plus the additional 15% reserves. It is not until a Month-Ahead compliance filings that LSEs must demonstrate that they have acquired the full 100% of their requirements.

<sup>16</sup> D.04-10-035, pp. 15-16.

below the level of roughly 15 aggregated resource categories. All non-QF, non-renewable bilateral contracts are reported as a single group. Thus there is no way to actually discern the total magnitude of purchases the IOU may be proposing to make in any one RFO process.

Second, these values would not be released until three years ahead, e.g. for 2009 and beyond, making them a poor indicator of actual IOU contract signings. The specific situation of the IOU would have changed by the time the bids are actually made, due to the fact that demand may have shifted, and that additional resources have been procured in the interim. Moreover, it may be highly desirable to provide a general description of the amount of incremental capacity that is needed for just the third quarter, since it may be that this very specific information helps policy makers to decide that a demand response program which can operate just during the summer peaking season is a cost-effective way to fill some or all of that need. It may also be helpful to a generation developer to know general quarterly capacity information as the developer may be seeking an opportunity initially to construct a simple cycle peaking power plant for satisfying peaking needs that might at some later date be converted into a combined cycle facility that can also supply energy, if and when the IOU need arises.

As a result, Energy Commission staff does not believe that the IOUs have demonstrated that this aggregated number meets the definition of a trade secret.

### **iii. Refutation of appeals of IOU bundled customer quarterly energy tables**

In their appeals, SCE and PG&E oppose release of quarterly energy data. (SDG&E chose not to appeal this one of the Executive Director's proposals.) In its appeal, PG&E plainly states that it opposes release of all quarterly data at any level of aggregation. The principal rationale PG&E offers is that it has significant seasonal energy and capacity fluctuations from the generation it owns or has under contract, and that release of these fluctuations would permit other market participants to "manipulate the procurement process at the expense of PG&E and its customers." [PG&E Appeal, p. 3] At the outset, let us establish that actual production at each hydro-electric facility must be reported to FERC in public documents.<sup>17</sup>

However, PG&E's claim ignores the fact that there is already significant public information about these seasonal energy and capacity fluctuations. As shown in Table 2 and Appendix A, several major IOUs in the Northwest (Avista, Idaho Power, and Puget Sound Energy) reveal monthly energy resource needs. These utilities are just as exposed to hydroelectric generation fluctuations as PG&E is exposed, if not more so.

Using annual energy summaries that IOUs allowed to be disclosed, the Sacramento Municipal Utility District is exposed (1,740 GWh out of 12,000 GWh requirements) to a

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<sup>17</sup> FERC Form 1 requires PG&E to provide very detailed annual data for each individual large hydro-electric facility and less detailed data for each small hydro-electric facility. Any utility with a FERC licensed hydro-electric facility has the same obligation. Thus, PG&E's annual variations are already public knowledge.

similar degree as PG&E is exposed (15,000 GWh out of 82,000 GWh requirements).<sup>18</sup> SMUD has not opposed the Executive Director's quarterly energy aggregation proposal. In fact, SMUD has not requested that the monthly, resource-specific data that it filed be classified as confidential. PG&E and SMUD have facilities in the same watersheds, and are essentially exposed to the same hydroelectric generation risks. Further, when PG&E and SMUD are dealt a poor hand by rainfall and snowpack variations, they both go to the same market for supplemental resources to balance their resources plans. When nature rewards them, they both may have seasonal surpluses they sell into the same market. The fact that other utilities with similar resources do not protect this information indicates that withholding it from disclosure does not create an economic advantage for these two utilities.

Finally, we note that in rulings made in the two recent cycles of procurement proceedings, the CPUC has directed the IOUs to make available greater amount of resource category data than in the previous cycles, including historic quarterly energy generation. Further, the IOUs were ordered to make available their utility-owned generation (which consists of three broad classes – nuclear, fossil, and hydro-electric) estimates for 2006 on a quarterly basis. The quarterly hydroelectric generation variations that PG&E seeks to protect in its appeal of the Executive Director's aggregation proposal are precisely the same hydro-electric generation variations that the ALJ Ruling requires for historic years and for 2006. For 2009 and beyond, PG&E likely expects average weather conditions, whereas the historic data certainly reveal the variations actually experienced in these years. Revealing the historical variations is likely to yield more precise data than the total, long-term average expected generation from these hydro-electric generators present in the aggregated summary tables. Requiring IOUs to release the 2006 projections for IOU resources exposes about 39% of PG&E's total resources on an annual energy basis, which includes the "vital" hydro-electric component PG&E uses as the centerpiece of its justification for protection.<sup>19</sup>

SCE makes the same arguments in favor of protection for quarterly energy tables, using hydro-electric fluctuations as does PG&E; however, SCE also stresses the net long situation and the damages it alleges would befall its ratepayers if its energy surpluses were known on a quarterly basis. [SCE Appeal, pp. 6-7]

Finally, the energy portion of the demand forecast was required to be released on a quarterly basis for years 2006 – 2010. The IOU bundled customer portion of the quarterly energy table that PG&E and SCE opposes releasing in their appeals of the Executive Director proposal contain precisely the same quarterly values that the May 9, 2005 Ruling of ALJs Halligan and Thorson has ordered PG&E and the two other IOUs to release.<sup>20</sup> PG&E has already provided this data to all members of the R.04-04-003 service list. This means that this portion of the proposed quarterly aggregated energy

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<sup>18</sup> CEC Staff Paper, "Resource Plan Aggregated Data Results," CEC Report No. CEC-150-2005-001, June 2005, Tables 11 and 44 for year 2009.

<sup>19</sup> CEC, CEC-150-2005-001, Table 11.

<sup>20</sup> CPUC R.04-04-003 and R.04-04-025, ALJ Halligan/Thorson Ruling, May 9, 2005, p. 27.

table does not meet the definition of a trade secret, which is limited to data that has not been made public.

For these reasons, Energy Commission staff does not believe that the IOUs have demonstrated that IOU-specific, quarterly energy summary tables proposed by the Executive Director meet the definition of a trade secret.

## **B. Appeals by IOUs of planning area energy and capacity proposals**

First, we note that IOUs did not oppose the annual capacity and energy tables aggregated to planning areas. The stated objective of the Executive Director to find a meaningful level of aggregation that the LSEs could support was achieved for the annual versions of these tables. Staff gratefully acknowledges a shift in IOU position between the time of their response to the preliminary aggregation proposal and the time of their responses to the formal proposal. IOUs initially opposed an annual planning area capacity table.<sup>21</sup>

Staff speculates that the discussions held and the decision by staff to agree to withhold 2006-2008 data from all aggregated summary tables was a meaningful concession. While the planning areas are dominated by the IOU contained within each one, the 15-20% contribution of POUs and ESPs is apparently sufficient for them to agree to this level of disclosure. Given this annual disclosure, the specific question before the Energy Commission is whether the IOUs have demonstrated that monthly data aggregated to a quarterly level does not adequately protect trade secrets. Staff's assessment discusses the capacity and energy summary tables separately.

### **i. Refutation of appeals of planning area quarterly capacity tables**

PG&E and SDG&E have appealed the Executive Director's proposal for quarterly capacity tables for planning area aggregations. SCE has not.

In its appeal, SDG&E offers no specific rationale for opposing quarterly planning area capacity tables, versus supporting annual planning area capacity tables. Its arguments are quite general, as they have been in all of its applications for confidentiality .

PG&E asserts that all LSEs plan to an annual target, and that there is no public policy rationale for the release of quarterly information. Staff disagrees with both elements of PG&E's claim.

Before we address PG&E's claim, however, we refer back to our discussion on bundled customer quarterly capacity table. The IOUs have failed to demonstrate that the aggregated summary table is a trade secret. Thus, an aggregated summary table that also includes additional end-use customers also cannot be a trade secret, as planning area table is even more aggregated than an IOU bundled customer table.

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<sup>21</sup> SCE Appeal, Appendix 2, pp. 3-4.

With respect to PG&E's assertion that IOUs plan to an annual target, we note that the resource adequacy requirements applicable to LSEs under the CPUC's jurisdiction, impose monthly capacity requirements. Beginning with June 2006, each month's peak loads must be met by each LSE using qualifying capacity. It is possible for PG&E and other LSEs subject to these requirements to use the highest annual value for these monthly peaks, but that is not likely to be the least cost manner of satisfying the requirements, and such a gross solution would almost certainly be opposed by ratepayer protection groups. Further, resources must satisfy qualifying capacity rules, and for some seasonal resources, the qualifying capacity will fluctuate from month to month. Thus, from the resource adequacy compliance perspective, there is good rationale for public policy makers to understand the resource plan at the level of quarterly capacity tables as proposed by the Executive Director.

Second, apart from the regulatory compliance issues identified above, the very existence of the seasonal hydro-electric generation issues that PG&E raises as a rationale for protecting the data are precisely the reasons that public disclosure is important. To the extent that seasonal generation fluctuations do not naturally match seasonal load fluctuations, then complementary resource additions are needed to balance overall regional supply with demand. This kind of broad regional, not LSE-specific, examination is what the planning area aggregation level is designed to permit. Many groups need to have knowledge of supply/demand imbalances. Policy makers need this seasonal information to understand when making resource preference policy decisions. Generation developers need this knowledge to ascertain the market for new generation additions, and whether these are year-round or seasonal needs. LSEs outside of the region need this knowledge to understand how to assess the prospects for importing power from Northern California when other regions of the Western Interconnection have their own resource deficits. This level of understanding will lead to more cost-effective resources being available to customers, not fewer.

## **ii. Refutation of appeals of planning area quarterly energy tables**

PG&E has appealed the Executive Director's proposal for quarterly energy tables for planning area aggregations. SCE and SDG&E have not. Thus this argument focuses exclusively on PG&E.

PG&E makes no specific justification for its opposition to planning area quarterly energy tables, but simply rejects all forms of quarterly aggregation of monthly data. Again, we refer back to our earlier discussion of the aggregation consisting of bundled customer quarterly energy needs, and note that an aggregation with other end-use customers in it cannot be entitled to any more protection than that available to the bundled customer quarterly energy table.

Unlike the planning area capacity table, which can inform the resource adequacy process now about to be implemented for June 2006 and subsequent months, there is no direct regulatory compliance issue to be informed using the quarterly energy tables. However, should the Commission decide that IOU-specific quarterly energy tables should not be

released, the Commission should strongly consider release of the planning area quarterly tables to provide at least a regional perspective. The further dilution by adding other LSEs in the region should diminish the impacts of the concerns that PG&E raises.

## **5. Conclusion**

The Executive Director granted confidentiality to those LSEs requesting protection for resource plan data at the level of monthly, resource-specific values. The June 3 aggregation proposal condenses these data to perhaps 2-4% of the original size, leading to annual and quarterly summary tables for both IOU bundled customers and for control areas and planning areas. These aggregated values represent planning information less detailed than that commonly released by major IOUs around the West and by virtually all POUs here in California.

The disputed aggregation tables are not trade secrets. They are not directly connected to the specific products that IOUs buy or sell in the market place. They are distantly related to the amount or number of all of the various products that IOUs might need to buy or sell based on assessments made in later 2004/early 2005. Since they are only proposed to be released for years 2009 and later, they are long-term and not short-term. These assessments will be replaced, or altered, at least once more before year 2009 becomes current.<sup>22</sup> They are increasingly less accurate as time goes by and IOUs engage in actual transactions in the market that alters their actual supply/demand balance through time.

Even the quarterly summary tables provide only a crude idea of the total supply/demand gap that is predicted to exist under various sets of assumptions. They say nothing about whether or how much an IOU needs to buy of any specific market product. Many combinations of different market products would satisfy IOU energy and capacity requirements. To at least some degree, IOUs can postpone purchases of products stemming from RFO bid processes and implement another RFO process seeking lower bids or different types or combinations of products. However, the general information provided does send market signals to other market participants and to regulators that are likely to result in more cost-effective resources being available to the very ratepayers the IOUs are claiming they are protecting in these appeals. The companion testimony sponsored by Julia Frayer of London Economics International provides an explanation of how the IOU efforts to shield the planning data from disclosure, instead of protecting the interests of IOU ratepayers, may actually harm these ratepayers by making the market less efficient.

The Energy Commission staff believes that the IOUs have not demonstrated that the aggregation tables proposed by the Executive Director in his June 3, 2005 proposal are trade secrets, and therefore urge the Commission to reject the IOU appeals.

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<sup>22</sup> The Energy Commission is required to provide the Integrated Energy Policy Report biennially, so as part of the proceeding leading up to the 2007 IEPR one could expect that the Energy Commission will require new resource plans from LSEs sometime in later 2006 or early 2007.

**Table 1. Status of IOU appeals of aggregation proposals**

<b>Temporal aggregation</b>	<b>Proposal</b>	<b>Type</b>	<b>Published by Staff as summary table<sup>23</sup></b>	<b>IOU positions</b>
Annual	1. IOU bundled-customer specific results; report individual scenarios	Capacity	No	PG&E, SCE, and SDG&E oppose
		Energy	Yes, for each scenario	
	2. Planning Area Aggregation across LSEs; report individual scenarios	Capacity	Yes, for each scenario	
		Energy	Yes, for each scenario	
	3. Planning Area Aggregation Across LSEs; report range spanning scenarios (only proposed for capacity)	Capacity	No (can be constructed from proposal 2 tables)	
Quarterly	1. IOU bundled-customer specific results; report individual scenarios	Capacity	No	PG&E, SCE, and SDG&E oppose
		Energy	No	SCE and PG&E oppose
	2. Planning Area Aggregation across LSEs; report individual scenarios	Capacity	No	SDG&E and PG&E oppose
		Energy	No	PG&E opposes
	3. Planning Area Aggregation Across LSEs; report range spanning scenarios (only proposed for capacity)	Capacity	No	PG&E opposes

<sup>23</sup> CEC Staff Paper, CEC-150-2005-001, June 2005.

**Table 2. Disclosure of Load and Resource Forecasts in Western Utility Resource Plans**

Utility	Forecast of:			Web Links
	Load	Resource Need	Resource Specification	
<b>Arizona Public Service</b>	Monthly C 2007-2011 p. 21-25	Monthly C 2007-2011 p. 21-25	Resource Categories (existing) Monthly E 2007-2011 p. 26-28	<a href="http://www.aps.com/files/rfp/2005_Reliability_RFP_Final.pdf">http://www.aps.com/files/rfp/2005_Reliability_RFP_Final.pdf</a>
<b>Avista</b>	Monthly E & C 2004-2023 p. 48-67, 74-93	Monthly E & C 2004-2023 p. 48-67, 74-93	Resource Categories Annual E 2004-2023 p. 31	<a href="http://www.avistautilities.com/assets/resources/plans/electric/2003_IRP_Appendices.pdf">http://www.avistautilities.com/assets/resources/plans/electric/2003_IRP_Appendices.pdf</a>
<b>Idaho Power</b>	Monthly E & C 2004-2013 p. 6-27	Monthly E & C 2004-2013 p. 67-73	Specific Resources Annual E & C 2004-2013 p. 87-98	<a href="http://www.idahopower.com/pdfs/energycenter/irp/2004_technical_appendix_final.pdf">http://www.idahopower.com/pdfs/energycenter/irp/2004_technical_appendix_final.pdf</a>
<b>NorthWestern Energy</b>	Annual E 2004-2023 P. 55-57	Not Clearly Specified	Specific Resources Annual C Pre-2007 p. 18, 21	<a href="http://www.montanaenergyforum.com/pdf/EDSRPP.pdf">http://www.montanaenergyforum.com/pdf/EDSRPP.pdf</a>
<b>PacifiCorp</b>	Annual E & C 2006-2025 p. 43 of Appendix	Annual E & C 2006-2015 p. 94-97 of Appendix	Specific Resources* Annual C 2006-2015 p. 190-193 of IRP	<a href="http://www.pacificorp.com/File/File47422.pdf">http://www.pacificorp.com/File/File47422.pdf</a> (IRP) <a href="http://www.pacificorp.com/File/File47424.pdf">http://www.pacificorp.com/File/File47424.pdf</a> (Appendix)
<b>Portland General Electric</b>	Annual E & C 2005-2022 p. 109-114	Annual E & C 2005-2022 p. 109-114	Specific Resources Annual E & C 2005-2022 p. 109-114	<a href="http://www.portlandgeneral.com/about_pge/regulatory_affairs/financials/pdfs/irp_supplement.pdf">http://www.portlandgeneral.com/about_pge/regulatory_affairs/financials/pdfs/irp_supplement.pdf</a>
<b>Public Service Company of Colorado</b>	Annual E & C 2004-2033 p. 33 of Appendix	Annual C 2004-2013 p. 280 of Appendix	Resource Categories Annual C 2004-2013 p. 129-140 of IRP	<a href="http://www.xcelenergy.com/docs/corpcomm/Document1of4.pdf">http://www.xcelenergy.com/docs/corpcomm/Document1of4.pdf</a> (IRP) <a href="http://www.xcelenergy.com/docs/corpcomm/Document4of4.pdf">http://www.xcelenergy.com/docs/corpcomm/Document4of4.pdf</a> (Appendix)
<b>Puget Sound Energy</b>	Monthly E (2006) Annual E & C (2006-2025) p. 161-162, 164 of IRP	Monthly E (2006) Annual E & C (2006-2025) p. 161-162, 164 of IRP	Specific Resources Annual C 2006-2025 p. 3-24 of Appendix	<a href="http://www.pse.com/about/supply/LCP/20050503/LCP_no%20appendices.pdf">http://www.pse.com/about/supply/LCP/20050503/LCP_no%20appendices.pdf</a> (IRP) <a href="http://www.pse.com/about/supply/LCP/20050503/Appendix%20G--Electric%20Results.pdf">http://www.pse.com/about/supply/LCP/20050503/Appendix%20G--Electric%20Results.pdf</a> (Appendix)
<b>Sierra Pacific</b>	Annual E & C 2004-2024 p. 7 of Volume I	Annual C 2004-2024 p. 23, 39-41 of Volume VI	Specific Resources* Annual C 2004-2024 p. 39-41 of Volume VI	Not available online

**Note:** E = energy, C = capacity. Page numbers refer to document pages (e.g., 33 of 173), *not* numbered pages.

\*Except for renewables, which are categorized more broadly as “renewables” or “planned purchases.”



## Appendix A

### Summary of Resource Plan Disclosure by Representative Utilities

A selection of utility websites containing public resource planning information are summarized below for five of the largest investor-owned utilities outside of California.

#### Arizona Public Service Company

Arizona Public Service (APS) provided a summary of its long-term resource plan as an attachment to a bid solicitation package for long term capacity posted on its internet website on May 31, 2005. The document is available at [http://www.aps.com/files/rfp/2005\\_Reliability\\_RFP\\_Final.pdf](http://www.aps.com/files/rfp/2005_Reliability_RFP_Final.pdf)

<b>Data Categories</b>	<b>Variables Presented</b>	<b>Time Intervals</b>
Customer demand	Annual system peak and reserve requirements	Annual 2007 - 2011
Resources	Annual capacity of existing generation resources by broad category	Annual 2007 - 2011
	Monthly energy generation by broad category of resources	Monthly for 2007 - 2011
Resource Need	Annual peak hour surplus or deficiency	Annual 2007 - 2011

#### Idaho Power Company

Idaho Power Company prepared a long-term integrated resource plan for 2004 – 2013 in July 2004. The most pertinent aspect is Chapter 4, which discusses monthly supply/demand capacity balances for years 2004 – 2013. The study is available at [http://www.idahopower.com/pdfs/energycenter/irp/2004\\_IRP\\_final.pdf](http://www.idahopower.com/pdfs/energycenter/irp/2004_IRP_final.pdf)

<b>Data Categories</b>	<b>Variables Presented</b>	<b>Time Intervals</b>
Customer demand	Monthly energy and peak capacity	Monthly 2004-2013
Resources	Annual energy and capacity by resource	Annual 2004-2013
Resource Need	Monthly peak hour surplus or deficiency for 3 scenarios	Monthly 2004 - 2013

## **PacifiCorp**

In both 2003 and 2004, PacifiCorp posted long-term resource plans in great detail to its internet website. These resource plans are notable for both the detailed quantitative data on demand forecasts, resource plans, and net surplus or deficit position in future years, but also in the supporting documentation. Appendix F is a Load and Resource Capacity Report. The study is available at <http://www.pacificorp.com/Navigation/Navigation23807.html>

<b>Data Categories</b>	<b>Variables Presented</b>	<b>Time Intervals</b>
Customer demand	East and West system peak demand forecasts for a base case	Annual for 2006 - 2016
Resources	East and West resource peak capacity by resource categories for a base case	Annual for 2006 - 2016
Resource Need	East and West system surplus or deficiency for base case and 22 scenarios	Annual for 2006 – 2016

## **Portland General Electric Company**

Portland General Electric (PGE) posted a supplement to its 2002 Integrated Resource Plan in February 2003. pp. 51-53 and Appendix A, pp. 98-104 are the most germane. The study is available at [http://www.portlandgeneral.com/about\\_pge/regulatory\\_affairs/filings/pdfs/irp\\_supplement.pdf](http://www.portlandgeneral.com/about_pge/regulatory_affairs/filings/pdfs/irp_supplement.pdf)

<b>Data Categories</b>	<b>Variables Presented</b>	<b>Time Intervals</b>
Customer demand	Annual energy, peak month energy, and annual peak demand for system	Annual for 2005 – 2022
Resources	Annual energy, peak month energy, and annual peak capacity by specific resource	Annual for 2005 – 2022
Resource Need	Annual energy, peak month energy*, and annual peak capacity* resource requirement for system	Annual for 2005 – 2022

\* Both peak month energy and peak demand are escalated for 12% planning reserves.

## **Puget Sound Energy**

Puget Sound Energy (PSE) prepared and posted to its internet website a long-term least cost plan in April 2005. Chapters VI and XI are the most germane. The study is available at <http://www.pse.com/about/supply/resourceplanning.html>

<b>Data Categories</b>	<b>Variables Presented</b>	<b>Time Intervals</b>
Customer demand	Average energy and peak demand for system	Monthly for 2006 Annual for 2005 – 2025
Resources	Average energy and peak capacity by categories of resources	Monthly for 2006 Annual for 2005 – 2025
Resource Need	Average energy and peak resource requirement (escalated for operating reserves) for system	Monthly for 2006 Annual for 2005 – 2025

## **Statement of Qualifications**

### **Michael R. Jaske**

Dr. Michael Jaske is a senior policy analyst in the Strategic Issues Integration Group of the Executive Office of the California Energy Commission (CEC). For twenty years he served as the Chief Demand Forecaster and provided technical direction for the Commission Staff's independent demand forecast, and assisted the Commission representing demand forecasts in other forums. Dr. Jaske plays an active role in the development and advocacy of the CEC's positions on energy market structure and electricity planning.

Dr. Jaske's educational background includes a BS in Chemical Engineering from Oregon State University, and a MS and Ph.D. in Systems Science, both from Michigan State University. Dr. Jaske is a member of the IEEE Power Engineering Society. Dr. Jaske serves on the Energy Policy Committee of IEEE-USA to educate national policymakers on electricity issues.

Dr. Jaske has published widely in the energy demand forecasting, DSM savings quantification, and air quality impacts literature. Dr. Jaske has provided overall guidance for several CEC staff activities concerned with retail restructuring of the electricity industry (direct access policy, load profiling, retail settlements and information flow, meter and data communication systems, utility service unbundling and ratesetting). Dr. Jaske is currently active in various California and Western Interconnection forums addressing the design and implementation of resource adequacy.

Dr. Jaske has testified numerous times at the CEC on demand forecasting and energy planning subjects. He has also sponsored CEC testimony at the California Public Utilities Commission in rate case proceedings on data collection, DSM measurement and evaluation to support demand forecasting; on use of CEC demand forecasts for resource planning; on design and operation of load curtailment programs and real-time tariffs; on the policies to regulate utility low emission vehicle programs; in the restructuring of the electricity utilities on service unbundling to implement retail competition, revenue cycle service credits and oversight; on the return of procurement responsibility to IOUs; on the confidentiality of planning data; and other topics.

1 TESTIMONY OF  
2 JULIA FRAYER  
3

4 I, Julia Frayer, declare:  
5

- 6 1. I am an applied economic consultant, specializing in the electricity sector  
7 and other infrastructure industries. I am one of the partners and a Managing  
8 Director of London Economics International LLC ("LEI"). As Managing  
9 Director, I currently direct many of the company's engagements involving  
10 market design and policy making in electricity markets, particularly with respect  
11 to auction design and market power regulations. A detailed summary of my  
12 credentials is set forth in Appendix A, attached to this testimony.

13 At the request of the staff at California Energy Commission ("CEC"), I  
14 have been asked to conduct a review of the declarations and analysis prepared  
15 by the Investor Owned Utilities ("IOUs") (and their market experts) in their  
16 appeal of the June 3, 2005 *Notice of Intent to Release Aggregated Data* (the "NOI")  
17 issued by the Executive Director of the CEC to release aggregated summary  
18 tables on future supply-demand balances. My testimony summarizes the  
19 conclusions drawn from my review and investigation of the various documents  
20 and reports submitted by the IOUs, my professional experience with similar  
21 market processes, and well-accepted economic theory.

- 22 2. **Summary of key conclusions:** I reviewed the declarations and analyses  
23 prepared by the IOUs and have found that their investigation of the situation is  
24 not representative of actual market realities in California. In light of actual  
25 market conditions and the character of the aggregated summary tables, economic  
26 and market theories on information policies do not support the IOUs'  
27 contentions on broadly three grounds.

1           **First**, the claims made by the IOUs and their market experts are based on  
2 abstracted experimental analysis which ignores key considerations of the actual  
3 procurement processes of the IOUs and the current market environment for  
4 electricity supply. For example, the experimental study conducted by Professor  
5 Charles Plott (attached in the declaration filed by Southern California Edison  
6 Company (“SCE”)) assumes that competition among suppliers is fixed (e.g.,  
7 there are no new entrants or retirements) – an assumption that is inherently  
8 flawed, given the dynamism in a deregulated, competitive electricity market and,  
9 specifically, actual experience in California’s electricity sector to date. In  
10 addition, the experimental study uses very different data assumptions from the  
11 aggregated summary tables that are at issue in this proceeding. Professor Plott  
12 tests the impact of continuously revealing the entire demand curve (which  
13 consists of quantities for the hypothetical product that the buyer is seeking to  
14 procure *and* the marginal value that the buyer places on each incremental  
15 quantity) in his experiments. The aggregated summary tables that are proposed  
16 to be revealed by the NOI will not be as extensive as the demand curve data  
17 revealed in the experimental analysis, nor will suppliers have access to  
18 continuous updates on the marginal value that the IOUs place on each MW of  
19 energy and capacity to be procured. In all reasonableness, by the time the CEC  
20 releases the aggregated summary tables as part of the *2005 Energy Report* process,  
21 the underlying information will have been outdated by at least six months.  
22 Moreover, the confidentiality already guaranteed to the first three years of data  
23 (2006-2008) makes Professor Plott’s experimental study a less appropriate  
24 comparison. Furthermore, the IOUs and their market experts characterize the  
25 aggregated summary tables as a “trade secret” composed of private, wholly  
26 original information. In reality, these aggregated summary tables serve as a  
27 refinement of the existing public knowledge base, effectively a replacement (or

1 substitute) for already available information. As I discuss further below,  
2 economic theory can allow us to conclude that information policies which  
3 require the gathering and dissemination of information from buyers in an  
4 auction process reduces uncertainty for the sellers and serves as a substitute for  
5 pre-existing, less accurate, assumptions regarding that information made  
6 privately by some sellers. Though economic theory suggests that there are a  
7 number of (conflicting) effects brought about by the introduction of information,  
8 to the extent that the new data is a refinement of existing private information  
9 held by some sellers, it will improve outcomes for buyers (i.e., resulting in a  
10 lower price, *ceteris paribus*). Professor Plott's experimental study has not been  
11 designed to assess the impact of refined information, as represented by the  
12 aggregated summary tables.

13 **Second**, the IOUs' concerns about possible "manipulation" disregard the  
14 safeguards included in the NOI, such as the aggregation of the monthly raw  
15 data, the three-year confidentiality window (during which period most utility  
16 procurement is currently conducted), and the market structure within which  
17 procurement processes are undertaken. Auction theory suggests that the  
18 presence of market power (such as collusive behavior among bidders (i.e.,  
19 suppliers)) would lead to sub-optimal outcomes. However, the IOUs do not  
20 substantiate their market power concerns in light of the aggregated summary  
21 tables release proposal in the NOI. The declarations provided by the IOUs coyly  
22 imply coordinated interaction among suppliers, but do not describe how these  
23 interactions are realized or how current structural elements in California support  
24 these implications. Given the current market structure in the state, with many  
25 qualified suppliers and the potential for many new suppliers in the longer term,  
26 economic theory would suggest that coordinated action (even tacit collusion) is  
27 unlikely. Rather, economic theory in conjunction with the existing market

1 structures would suggest that workable competition is the norm. Accordingly,  
2 information dissemination, such as that proposed in the NOI, should reduce  
3 uncertainties of suppliers and provide for more efficient market outcomes under  
4 a competitive market structure, including lower prices as a result of lower  
5 embedded risk premiums in the offers of suppliers and aggressive competition  
6 among existing suppliers, as well as competitive pressures from possible new  
7 development. James Shandalov, an independent consultant retained by Pacific  
8 Gas and Electric Company (“PG&E”) refers to what a (single) marketer would do  
9 with certain information, and then later jumps to statements concerning the  
10 “inadvertent” actions of the whole market, without addressing how a single  
11 supplier’s use of the information translates into an abuse of the information on a  
12 market-wide basis.<sup>1</sup> Though Professor Plott is more up-front in stating that his  
13 study’s objective was to capture the “strategic behaviors that exist in the  
14 market,”<sup>2</sup> it is unclear whether his experimental study accurately represents the  
15 current market structure in California, with the three large buyers and dozens of  
16 existing suppliers (he never explicitly documents the number of sellers and  
17 buyers that participated in his experimental sessions). We do know for a fact  
18 that this experimental study does not take into account the impact of potential  
19 new entrants. Moreover, the experimental study captures the impact of  
20 information dissemination on a real-time basis to all suppliers, rather than the  
21 forward-looking aggregated quantity points to be released according to the NOI  
22 on a lagged, biennial basis as part of the cyclical planning process.

23 **Third**, the analyses presented by the IOUs and their market experts ignore  
24 the harmful consequences for ratepayers over the long-term if such aggregated  
25 summary tables are not released. The aggregated summary tables provide useful

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<sup>1</sup> Mr. Shandalov uses the adverb “inadvertently” in a number of instances in his testimony. *See* Shandalov at 10, 12, and 14.

<sup>2</sup> *See* Plott at 6.



1 and very important signals for new investment. Such signals will motivate new  
2 investment in generation, expand the competitive opportunities for buyers to  
3 procure energy, and thus provide secure and reasonably priced supply for  
4 ratepayers in the future. In my professional opinion, the aggregated summary  
5 tables are not a “trade secret” because their release will benefit ratepayers.

6 3. **For introductory purposes, it is useful to quickly summarize the**  
7 **aggregated summary tables that are being disputed at the July 13, 2005 hearing.**

8 In January 2005<sup>3</sup>, in preparation of procurement recommendations in the 2005  
9 *Integrated Energy Policy Report* (“IEPR”), the CEC requested detailed information  
10 from the resource plans prepared by California’s Load Serving Entities (“LSEs”).<sup>4</sup>  
11 LSEs in California were obligated to file detailed resource plans in 2004 with the  
12 California Public Utility Commission (“CPUC”) for the 2006-2016 timeframe. The  
13 information requested by CEC in its January 2005 publication, *Forms and*  
14 *Instructions for the Electricity Resources and Bulk Transmission Data Submission*,  
15 included: S-1 Capacity Resource Accounting Table, S-2 Energy Balance  
16 Accounting Table, S-3 Generic Renewable Capacity and Energy Locations, S-4  
17 Projected QF Energy and Costs, and S-5 Bilateral Contracts.

18 The LSEs complied with the data request in March and April 2005, though  
19 also requesting confidentiality. The information filed with the CEC stemmed  
20 from resource plans prepared by the LSEs as far back as the first half of 2004  
21 when the IOUs submitted their Long Term Procurement Plants to the CPUC.<sup>5</sup>

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<sup>3</sup> The first workshops where resource plan data needs were discussed occurred in November 2004. The actual Supply Forms and Instructions were adopted on January 19, 2005 with supplemental Forms & Instructions adopted on March 2, 2005.

<sup>4</sup> The California Public Resource Code Section 25301 directs the CEC to conduct regular assessments of all aspects of energy demand and supply. To perform these assessments and forecasts, the CEC may require the submission of demand forecasts, resource plans, market assessments, and related outlooks from electric and natural gas utilities, transportation fuel and technology suppliers, and other market participants.” (From PRC 25301 (a))

<sup>5</sup> IOU Long Term Procurement Plants (“LTTPs”) were officially filed July 9, 2004.

1           On June 3, 2005, the CEC Executive Director proposed an NOI to release  
2 in aggregated form the projected energy consumption/production and peak  
3 demand/productive capacity data provided by the IOUs. These aggregated  
4 summary tables would be released as part of the 2005 Energy Report Process (the  
5 2005 IEPR is expected to be complete in October 2005). There are currently three  
6 proposals for aggregating the data across geographical dimensions. All three  
7 proposals incorporate aggregation of the raw data in terms of time and by  
8 resource category. The temporal aggregation will result in monthly data being  
9 transformed into quarterly and annual reference points. The resource  
10 aggregation will combine individual resource listings into categories of  
11 resources, such as utility controlled fossil resources or existing renewable  
12 contracts. The three geographical dimensions proposed in the NOI include: (1)  
13 bundled IOU specific tables for each scenario, (2) planning area tables for each  
14 scenario, and, (3) planning areas tables showing capacity scenario ranges.

15           The IOUs have objected to the release of certain portions of the aggregated  
16 annual data (specifically the capacity-based figures for the bundled IOU  
17 geographic dimension), and to all the quarterly tables (across all three  
18 geographic dimensions). The IOUs claim that the information – even in  
19 aggregated form – is commercially sensitive and they are entitled to the “trade  
20 secret” exemption from disclosure under the Public Records Act. The IOUs’  
21 specific objections to the NOI are detailed in Dr. Michael Jaske’s testimony.

22           Driving these objections to the aggregated summary tables’ release are  
23 several specific concerns. First, the IOUs are concerned that the release of the  
24 aggregated summary tables would allow suppliers to manipulate negotiations  
25 with the IOUs, thereby causing harm to ratepayers. More specifically, the IOUs  
26 claim that ratepayers would pay higher prices than if the contested aggregated  
27 summary tables were not released. These claims are based on observations from

1 Professor Plott's experimental study of a hypothetical market environment and  
2 James Shandalov's testimony from his market experiences as a trader (prior,  
3 during, and for some time after the California electricity crisis of 2000-2001), as  
4 well as the testimony of Kevin Cini, director of Energy Supply and Management  
5 at SCE. Mr. Shandalov claims that "suppliers' possession of the market sensitive  
6 information could result in ratepayer harm in the form of higher procurement  
7 costs," but only "inadvertently."<sup>6</sup> As I discuss further below, the arguments laid  
8 out by the IOUs and their market experts conflict with the reality of the NOI, fail  
9 to represent the actual commercial arrangements in the market (including  
10 availability of similar data) and existing market structure in the state, and conflict  
11 with well-accepted economic theory on the impact of the release of refined  
12 information (as represented by the aggregated summary tables) in such a market  
13 environment.

14 **4. In order to understand the theoretical considerations suggested by**  
15 **economic and auction design theory, as well as the shortcomings of the IOUs'**  
16 **arguments regarding ratepayer harm, it is useful to have a realistic**  
17 **characterization of the current electricity market in California, and especially**  
18 **the procurement process by which the three IOUs (the major "buyers" of**  
19 **electricity, on behalf of ratepayers) interact with suppliers.**

20 First, it is important to note that there are many buyers and sellers of  
21 wholesale electricity in the California market.<sup>7</sup> While there are a few large buyers  
22 of wholesale electricity (essentially the three IOUs), there are also numerous  
23 medium-sized buyers, such as the Sacramento Municipal Utility District,

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<sup>6</sup> See Shandalov at 1 and at 10, 12, 14.

<sup>7</sup> I use the term "California market" broadly in this testimony. Although I realize that currently there is no centralized day ahead market for electricity, there are still suppliers and buyers interacting and selling and buying electricity from each other through a number of informal, decentralized platforms. Thus, when I refer to the California market for electricity, I am making a statement about the informal trading and the general electricity market dynamics in the state.

1 Imperial Irrigation District, the City of Anaheim, and Modesto Irrigation District,  
2 and other third-party retailers (procuring on behalf of large industrial  
3 customers). Almost 20% of California's load is industrial.<sup>8</sup>

4 There are also many suppliers of electricity. As of the beginning of 2005,  
5 there were more than 50 holding companies that owned generation with  
6 aggregated installed capacity of more than 100 MW, with more than a dozen  
7 holding companies owning more than a total of 1,000 MW each in the state of  
8 California.<sup>9</sup> In addition, California imports significant amounts of electricity from  
9 generators in the Pacific Northwest and in the Southwest. Indeed, on an average  
10 hourly basis, the California Independent System Operator ("CAISO")  
11 coordinates imports of 3,765 MW from Arizona, 569 MW from Nevada and Utah,  
12 and 2,457 MW from the Pacific Northwest.<sup>10</sup> There are more than 20 electricity  
13 generation companies in the Pacific Northwest with more than 100 MW of  
14 aggregated installed capacity as well as another 20 plus electricity generation  
15 companies with more than a total of 100 MW each in the remaining portion of  
16 Western Electricity Coordinating Council ("WECC") that covers the Rocky  
17 Mountain, Arizona, Southern Nevada, and New Mexico region.<sup>11</sup>

18 The make-up of existing generation resources in California is regionally  
19 distinct, with a hydro-dominated northern California and primarily gas  
20 generation on the margin in Southern California. The seasonal shifts in available  
21 generation are already well-known and documented given the wealth of  
22 historical and short-term information on hydrological conditions. Furthermore,  
23 this unique characteristic of the California market (short-term seasonality and

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<sup>8</sup> Energy Information Agency ("EIA") statistics, 2003.

<sup>9</sup> Based on current data from *E-Velocity*, a commercial information vendor that compiles data submitted to the Federal Energy Regulatory Commission ("FERC"), EIA, the Environmental Protection Agency ("EPA"), the Securities and Exchange Commission ("SEC"), and WECC, as well as data from corporate annual and quarterly reports.

<sup>10</sup> FERC's *State of the Markets Report*, June 2005, p. 73.

<sup>11</sup> Based on data from *E-Velocity*.

1 longer term cyclical of hydro-electric generation in northern California) is  
2 important because of its impact on long-term planning needs for hydro-  
3 dependent northern California. Market signals, such as the aggregated summary  
4 tables, need to represent this short-term seasonality so that proper investments  
5 take place.

6 A second important characteristic of the California procurement process  
7 for electricity is that buyers and sellers have many alternative forums for  
8 engaging in market transactions. Buyers, specifically the IOUs, can buy on the  
9 spot market, use their own resources to meet demand, call on long-term  
10 contracts, and also procure from the bilateral market in terms of up to ten years  
11 (though the IOUs have noted that currently terms of up to five years are more  
12 typical). As such, the procurement process for most LSEs in California occurs  
13 over a short to medium term horizon. Likewise, suppliers have a variety of  
14 options available to them in terms of selling their energy, whether it be through  
15 the spot market, through medium-term bilateral contracts, or through a more  
16 official Request for Offer (“RFO”) process, like the kind initiated by SCE just last  
17 week.<sup>12</sup> The numerous avenues for transactions across time for California’s  
18 buyers of electricity and suppliers, coupled with the number of market  
19 participants, suggests a complex market structure which would be difficult to  
20 manipulate or game.

21 Another characteristic of a competitive electricity industry is the volume  
22 of information readily available for both suppliers and buyers of electricity, and  
23 this is particularly the case for California, given the organized markets operated  
24 by the CAISO and state and federal agency oversight. Dr. Michael Jaske

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<sup>12</sup> On July 1, 2005, SCE launched an RFO seeking contracts up to 56 months in length (less than five years) to serve its Southern California load. Contracts being sought include dispatchable unit-contingent tolling agreements, non-dispatchable qualifying facilities resources, unit dispatch call options, and daily call options from existing or newly constructed resources.

1 describes in his testimony the substantial data provided by generators and LSEs  
2 to FERC, the EPA, and the WECC, which is made publicly available on a regular  
3 basis. Indeed, there are also many proxies for the forecast energy and capacity  
4 data that the IOUs are arguing to keep confidential, such as those provided as  
5 part of the annual CAISO grid planning process as discussed in more detail in  
6 Dr. Michael Jaske's testimony, as well as the North American Electricity  
7 Reliability Council ("NERC") regional assessments.

8 In addition to the detailed information that market participants are  
9 required to file with federal and state regulatory agencies, there is a large amount  
10 of publicly available information on wholesale market price and volume  
11 dynamics facilitating the buying and selling process. For example, the CAISO  
12 manages markets for real-time imbalance energy and ancillary services,  
13 providing public price indications for both. In addition, other energy price  
14 indices for spot, near term, and forward markets are available from several  
15 different bilateral price indices such as Platts, Dow Jones, and the  
16 InterContinentalExchange ("ICE"). Platts provides day ahead peak and off peak  
17 average price data for SP15 (the zone covering Southern California), NP15 (the  
18 zone covering Northern California), and COB (the California Oregon border  
19 zone), as well as forward prices for SP15 and NP15 through the end of calendar  
20 year 2008, based on a survey of traders and actual transactions contract terms.<sup>13</sup>  
21 Dow Jones provides data for the same geographic hubs for day ahead peak and

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<sup>13</sup> *Platts*, a subsidiary of the McGraw-Hill Companies, provides energy information such as independent industry news and price benchmarks. *Platts* covers the oil, natural gas, electricity, nuclear power, coal, petrochemical and metals markets. *Platts* obtains its price data through its daily, confidential surveys of market participants. Through these surveys, *Platts* asks market participants to report all fixed-price physical and financial deals for delivery across key trading points in North America for each business day (and for longer time periods for its long-term assessment). The reporting of the data is consistent with FERC's standards which state that prices should be provided by individuals "separate from trading activities". See [www.platts.com](http://www.platts.com) for more information.

1 off-peak energy prices. The ICE also provides a similar daily index.<sup>14</sup> Amerex is a  
2 brokerage that provides information on bilateral trades on peak and off peak for  
3 SP15 and NP15 on a monthly, quarterly, and annual basis as far out as 2015.<sup>15</sup>

4 As such, it is evident that there is a fluid, competitive, and transparent  
5 wholesale power market in California, which enables the procurement and sale  
6 of electricity over different time horizons. Utility procurement generally occurs  
7 on a short to medium term, as compared to the longer time horizon that is  
8 covered in the aggregated summary tables that the NOI proposed to release.<sup>16</sup> As  
9 such, the arguments offered by the IOUs that the public release of such  
10 aggregated summary tables might distort the competitive procurement process  
11 seems to lack factual and logical grounding. The extent of publicly available,  
12 detailed information on demand and supply (as well as price indicators) is a key  
13 feature of the current market and any analysis of the ramifications of the release  
14 of the aggregated summary tables needs to take into account this reality.

- 15 **5. The aggregated summary tables proposed to be released by the NOI**  
16 **cannot be reasonably deemed a “trade secret” as similar commercial**  
17 **information is already in the public domain. The aggregated summary tables**  
18 **do not represent wholly new information, but rather a refinement of the**  
19 **existing knowledge base. Economic theory on auction design, information**  
20 **policy, and financial risk suggests that such a refinement of information (and**  
21 **substitution of privately-developed conjectures by suppliers with a public**

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<sup>14</sup> Note that data from the ICE is compiled and published by the 10X Group. See the following website for today's quotes: [http://www.10xgroup.com/indc/?id=indc\\_napp\\_report](http://www.10xgroup.com/indc/?id=indc_napp_report).

<sup>15</sup> Amerex is leading broker of physical electricity sales, uniting buyers and sellers in power markets across North America. The brokerage service was started in 1996 and currently transacts over 4,000 GWh of energy daily across North America, with the bulk of these transactions in physical power. See [http://www.amerexenergy.com/electrical\\_power.aspx](http://www.amerexenergy.com/electrical_power.aspx).

<sup>16</sup> Transactions are done typically over a one to five year period (as demonstrated by the terms of the recent SCE RFO), though longer transactions are legally possible. According to the NOI, the CEC has agreed to hold confidential all data from 2006 through 2008. Thus, the aggregated summary tables being discussed in this proceeding are for the 2009 to 2016 period.



1       **information set) should generally benefit the buyers in terms of more efficient**  
2       **market outcomes. In other words, under competitive market conditions, we**  
3       **should expect better results for the buyers (lower prices) due to reduced**  
4       **uncertainty and more aggressive competition among suppliers.**

5               Proxies for the aggregated information proposed to be released in the NOI  
6       are readily available. The aggregated summary tables simply allow the public,  
7       including the suppliers, to recalibrate and refine their understanding of possible  
8       future supply-demand conditions. Dr. Michael Jaske discusses both the  
9       disclosure of similar data by other IOUs that are part of the Western Interconnect  
10      and the release of related data that would potentially allow users to extrapolate  
11      comparable information about California’s demand and supply conditions.  
12      PG&E’s witness, Mr. Shandalov, concedes in his testimony that there is a lot of  
13      similar basic data already available when he notes that the suppliers will be able  
14      to rely on FERC Form 1 data to “interpolate”.<sup>17</sup> Similarly, SCE’s witness, Kevin  
15      Cini, also concludes that “much of the existing supply information... is already  
16      in the public domain.”<sup>18</sup>

17             In direct conflict with actual market dynamics and the intent of the NOI  
18      on the aggregated summary tables’ release, Professor Plott’s experimental study  
19      abstracts from reality and assumes that no information is known to buyers on  
20      suppliers’ willingness to sell in most of the experiments (i.e., those sessions  
21      involving “Sellers Informed”). Suppliers are informed of individual buyers’  
22      *complete* willingness to buy but that same information is not disclosed to other  
23      buyers. The aggregated summary tables’ release as recommended by the NOI  
24      would not produce these asymmetries – all market participants would have  
25      access to this refined information on expected supply-demand conditions.

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<sup>17</sup> See Shandalov at 13.

<sup>18</sup> See Cini at 15.



1 Moreover, Professor Plott assumes that there is no “public transaction price  
2 information,” as that would inevitably change the outcomes observed in his  
3 experiments by providing some additional knowledge of trading conditions.<sup>19</sup>  
4 As noted previously, there are in fact many robust indicators of overall market  
5 prices in the short- to medium-term (despite the decentralized nature of the  
6 bilateral market) available to all market participants in California today from a  
7 number of independent third-parties, including trade publications, brokerage  
8 institutions, and over-the-counter trading platforms.

9 The aggregated summary tables thus represent incremental or substitute  
10 information to the information that is already in the public domain or has been  
11 developed or extrapolated privately by potential sellers. Given this more  
12 accurate representation of the aggregated summary tables, we can review the  
13 theoretical implications of such information revelation on the procurement  
14 process.

15 Procurement has been described by academics as akin to an auction  
16 process, because in a Request for Proposal (“RFP”) or RFO, the buyer(s) will be  
17 soliciting and analyzing multiple offers from different suppliers simultaneously.  
18 Thus, through the competitive nature of the selection process, the procurement  
19 processes of the IOUs are generally characteristic of an auction.<sup>20</sup> It is therefore  
20 useful to look to the theory of auction design<sup>21</sup> to determine the possible impact  
21 of the release of the aggregated summary tables on procurement outcomes.  
22 Information policy is a key component of the overall framework by which

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<sup>19</sup> See Plott’s Exhibit A at page 4.

<sup>20</sup> Milgrom, Paul *Putting Auction Theory to Work* (Cambridge University Press) 2004, pg. 211-212.

<sup>21</sup> Economists have applied the principles of auction theory to many questions, including wage determination (see Margaret Stevens “Labour Contracts and Efficiency in On-the-Job Training” *Economic Journal* 1994), political economy (Feddersen and Pesendorfer “The Swing Voter’s Curse” *American Economic Review* 1996), and takeover battles (Bulow, Huang, and Klemperer “Toeholds and Takeovers” *Journal of Political Economy* 1999). Indeed, electricity markets have been specifically identified as auction markets in numerous academic publications.

1 economists distinguish and discuss the types of auctions and their equilibrium  
2 properties.

3 In well-accepted economic theories of auction design and information  
4 economics, dissemination of information that helps refine the participants' views  
5 on the value of the product being sold/bought is generally considered efficiency  
6 enhancing because it reduces private values and uncertainties, and in so doing  
7 motivates more aggressive competition. The risk-reduction benefits of additional  
8 information can also expand the horizon of bidders (statically, by lowering the  
9 threshold cost of participation, and also dynamically, through incentives for new  
10 entrants).

11 Auction theory establishes a number of conditions which, if met, indicate  
12 that the price the auction arrives at is efficient – that is, the price is an accurate  
13 assessment of the market value of the product being transacted. Paul Klemperer  
14 summarized these conditions in a recent article: “What really matters in auction  
15 design are the same issues that any industry regulator would recognise as key  
16 concerns: discouraging collusive, entry-detering and predatory behaviour.”<sup>22</sup>  
17 An efficient procurement process has a number of desirable characteristics: it  
18 allocates transactions to the lowest cost suppliers, it provides buyers with the  
19 lowest available prices, and the prices themselves account for all the information  
20 available in the market. Thus, the ability of an auction market to incorporate all  
21 the available information has serious implications for the efficiency of the market  
22 outcome and also attainable equilibrium between buyers and sellers.

23 In auction theory, auction mechanisms and equilibrium outcomes are  
24 distinguished by the type of information that participants have access to on the  
25 value of the product being transacted: public information and private  
26 information. Public information is available to all parties, and private

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<sup>22</sup> Klemperer, Paul “What Really Matters in Auction Design” *Journal of Economic Perspectives* 2002, pg. 169-189.

1 information is available to only a limited number of parties or one single party.  
2 In the critical examination of this topic, Milgrom and Weber analyze the impact  
3 that public and private information have on auction prices. They determine that  
4 having private information allows a company to make excess profits – a form of  
5 market inefficiency.<sup>23</sup> Thus, information dissemination that reduces private  
6 information is generally efficiency enhancing and profit-enhancing for the buyers  
7 (i.e., returns prices to pre-‘market failure’ levels). This is especially the case if the  
8 information revealed by the buyers to all suppliers *substitutes* for the “private  
9 information” developed by certain suppliers. The aggregated summary tables  
10 would achieve such an objective because of their wide public release in the 2005  
11 *Energy Report* process.

12 Classic economics holds that “the value of information cannot be negative.  
13 Relevant information allows more accurate decisions, and irrelevant information  
14 can just be ignored.”<sup>24</sup> However, as noted by Professor Plott in his experimental  
15 study, with the added complexity of game theory, information can hurt a party  
16 because it alters the way others behave and – from the buyer’s perspective in the  
17 procurement processes – can influence the relative timidity of the bidders  
18 (suppliers) and thus affect the expected purchase price in the procurement  
19 processes. The key to determining the likely impact of information is to define  
20 the value of the “new” information in relation to participants’ motivations and  
21 pre-existing information positions. If the revelation of “new” information by the  
22 buyers reduces private information held by certain suppliers, it will encourage  
23 more intense competition and increase the expected profits for the buyers (this is  
24 known as the *publicity effect* in auction theory). Moreover, if the buyers’  
25 revelation is a substitute for the supplier’s pre-existing private information on

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<sup>23</sup> Milgrom, Paul and Robert Webber “The Value of Information in a Sealed Bid Auction” *Journal of Mathematical Economics* 1982, pg. 105-114.

<sup>24</sup> Milgrom, Paul *Putting Auction Theory to Work* (Cambridge University Press) 2004, pg. 175.

1 the value of the product being transacted, then it also motivates competition and  
2 reduces bidders' (suppliers') profits to the benefit of the buyer(s) (this is referred  
3 to as the *weighting effect*).<sup>25</sup> Clearly, the aggregated summary tables being  
4 considered for release in the NOI are incremental information that would widely  
5 disseminate the same refined information about supply-demand expectations to  
6 all suppliers and all buyers. Furthermore, it would supplant some suppliers'  
7 previously developed conjectures about supply-demand balances, thus  
8 addressing the detrimental impact of private information to auction results.

9 Information dissemination as envisioned by the NOI also reduces  
10 uncertainty for suppliers. One key way that revelation of information reduces  
11 risk is by decreasing the chance that a winning bidder (in this case, selected  
12 supplier(s) from an RFO) will suffer the "Winner's Curse", where the supplier  
13 wins the supply contract, but ultimately loses money because his winning bid  
14 was based on incorrect internal estimates (incorrect private information).<sup>26</sup> In  
15 their 2002 paper on the IPO market, Jeremy Bulow and Paul Klemperer present  
16 evidence suggesting that more information reduces the uncertainty premium

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<sup>25</sup> For a summary of the formal discussion of the publicity and weighting effects, see pg. 157-207 in Paul Milgrom's *Putting Auction Theory to Work*. See also Paul Milgrom and Robert Weber "The Value of Information in a Sealed-Bid Auction" *Journal of Mathematical Economics* 1982; Richard Wngelbrecht-Wiggans, Paul Milgrom and Robert Weber "Competitive Bidding with Proprietary Information" *Journal of Mathematical Economics* 1983; Robert Wilson "Competitive Bidding with Disparate Information" *Management Science* 1969; Zvika Neeman "The Relevance of Private Information in Mechanism Design" *BU Working Paper* 2001.

<sup>26</sup> The winner's curse is a problem with common value auctions. Procurement of energy can be thought of as a common value auction because the commodity (electricity) is being transacted rather than the underlying generation asset (the sale of which is likely to be more akin to a private value auction because of unique technological and operation differences between different assets). A common value auction is formally defined as a process in which if all sellers held the same information, they would set the value at which they sell their product equally. If the auction is based on unbiased estimates of value of the product, it will result in an award of the supply contract to the most over-optimistic seller, who is then destined to make losses. Suppliers, knowing this is the case, incorporate a risk premium in their offers. The result is that the risk of unresolved winner's curse increases their offer prices and, in consequence, the final sale price. Academic work on the winner's curse has been extensive, and highlights include Jeremy Bulow and Paul Klemperer "Prices and the Winner's Curse" *RAND Journal of Economics* 2002; Paul Milgrom and Robert Weber "A Theory of Auctions and Competitive Bidding" *Econometrica* 1982; T.J. Feddersen and W Pesendorfer "The Swing Voter's Curse" *The American Economic Review* 1996; Paul Milgrom "Auctions and Bidding: A Primer," *Journal of Economic Perspectives* 1989; Richard H. Thaler *The Winner's Curse* (Princeton University Press) 1991.

1 that bidders build into their pricing models to account for the possibility of  
2 “Winner’s Curse.” Increasing access to information gives bidders (i.e., suppliers)  
3 more confidence that their valuation is correct, letting them bid more  
4 aggressively to beat out the competition.<sup>27</sup>

5 When bidders in an auction (i.e., suppliers in the procurement process) are  
6 risk-averse, revealing information may further reduce their private risk  
7 premiums, which they incorporated into their offers and thus reduce the price at  
8 which they are willing to transact. This interplay of risk and information policy  
9 is analyzed by Milgrom and Weber.<sup>28</sup> Risk-aversion classically defined by Von  
10 Neumann and Morgenstern<sup>29</sup> basically explains why individuals seek out  
11 insurance. The dictionary definition of risk-aversion explains this concept in  
12 terms of preferences: risk-averse entities are those who are “willing to pay  
13 money to avoid playing a risky game, even when the expected value of the game  
14 is in [their] favor.”<sup>30</sup> In a corollary, IOUs are generally willing to buy forward  
15 and lock in prices for future energy needs rather than buy on the spot market.  
16 Similarly, suppliers are generally willing to sell their supplies forward. Thus,  
17 risk aversion appears to be a good characterization of market participants in  
18 these procurement processes, suggesting that information dissemination which  
19 reduces uncertainty would have beneficial repercussions for buyers and, thus,  
20 for ratepayers.

21 The efficiency-enhancing properties of the NOI proposal for the release of  
22 aggregated information tables on supply and demand are generally ignored by  
23 the IOUs because of their incorrect generic or abstracted consideration of the

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<sup>27</sup> Bulow, Jeremy and Paul Klemperer “Prices and the Winner's Curse” *Rand Journal of Economics* 2002.

<sup>28</sup> Milgrom, Paul and Robert J. Weber “A Theory of Auctions and Competitive Bidding” *Econometrica* 1982, pg. 1089-1122.

<sup>29</sup> Von Neumann, John and Oskar Morgenstern *The Theory of Games and Economic Behavior* (Princeton University Press) 1944.

<sup>30</sup> See <http://hadm.sph.sc.edu/COURSES/ECON/RiskA/RiskA.html>.

1 aggregated summary tables. PG&E's Mr. Shandalov claims that the basic,  
2 aggregated supply and demand data shows the price that the utilities are willing  
3 to pay for energy and thus can create either a price floor or incentivize suppliers  
4 to sell their power into other markets. Mr. Shandalov's argument that the  
5 aggregated supply-demand data reveals the IOUs' price expectations ignores a  
6 key fact: the aggregated summary tables that the NOI intends to release consist  
7 of quarterly or annual figures on capacity (and peak demand) and production  
8 (and energy), denominated in MW and MWh units (respectively). The  
9 aggregated summary tables do not include any price indicators, nor are the IOUs  
10 being asked to publicly disclose their proprietary outlook on future fuel prices,  
11 which would be a key determinant of the supply curve and thus the "dollar  
12 value" companion to the supply and demand figures which is necessary to  
13 determine the price. Metrics on supply and demand alone do not indicate price.  
14 Mr. Shandalov's concerns about the price implications of the aggregated  
15 summary tables also ignore the fact that suppliers have a vast basis of knowledge  
16 already in hand, including forward price indications from bilateral transactions  
17 reported in the various price indices from Platts and Dow Jones, as well as by  
18 brokerage entities like ICE and Amerex.

19 Professor Plott's experimental analysis, included in his testimony on  
20 behalf of SCE, has similar shortcomings vis-à-vis the reality of information  
21 already available and the character of the aggregated summary tables. Given the  
22 theoretical ramifications of the quality of information being disseminated and the  
23 underlying environmental conditions in the experimental sessions, it is not  
24 surprising that Professor Plott's study observed higher average prices. Professor  
25 Plott analyzed the impact of the release of wholly new and detailed information  
26 about the buyer's demand curve to each supplier, assuming no prior knowledge

1 and no other market signals.<sup>31</sup> This is a substantial abstraction of reality with  
2 respect to the aggregated summary tables and the existing knowledge base  
3 among suppliers. Though exact contract prices are indeed confidential, many  
4 robust price indicators are currently available, in addition to proxy data that  
5 allows suppliers to determine and project similar information.

6 Furthermore, the experimental study assumes that the release is  
7 completely asymmetrical: “Buyers only knew their own valuations, and did not  
8 receive any information on sellers’ costs or other buyers’ values.”<sup>32</sup> However, this  
9 will not hold for the California market which has other relevant proxy  
10 information (the IOUs are well informed about each other’s positions and have  
11 extensive data on suppliers through the various filings prepared by those  
12 suppliers to the state and federal regulators), nor would that be the case with the  
13 release of the aggregated summary tables per the NOI (which would be  
14 disseminated to all and thus preclude the asymmetry between buyers assumed  
15 in the experimental study).

16 As a result of the constructs of the experiment, Professor Plott’s study  
17 analyzed the impact of the release of data at a much more restricted and granular  
18 level than anticipated by the NOI. In other words, Professor Plott’s study was  
19 not designed to address the subtle issue of the impact of a single release of the  
20 aggregated summary tables, which offer refined information on an existing  
21 knowledge base. Thus, Professor Plott’s conclusions, while interesting in a more  
22 abstract academic sense, may not have direct relevance to the situation raised by  
23 the NOI.

24 **6. The NOI includes adequate controls to prevent market manipulation.**  
25 **First, the NOI is proposing the release of aggregated, non-resource specific**

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<sup>31</sup> See Plott’s Exhibit A at page 10-11.

<sup>32</sup> See Plott’s Exhibit A at page 9.



1 data, which would make it difficult for suppliers to identify the exact  
2 commitments of their competitors. Second, the first three years of the forecast  
3 time horizon (2006 – 2008) from the resource plans will not be released.

4 IOUs have typically contracted for terms up to five years.<sup>33</sup> Thus,  
5 confidentiality of the supply-demand balance is maintained for the majority of  
6 the IOUs' typical procurement cycle. Furthermore, it is imperative to observe  
7 that the aggregated summary tables are not "real-time" data – there will be a lag  
8 of at least six months by the time the aggregated summary tables are published  
9 as part of the *2005 Energy Report* process from the date of submission of the raw  
10 data (and possibly over a year since the procurement plans were prepared by the  
11 IOUs). Moreover, no updates will be forthcoming until the next IEPR process is  
12 initiated. Market conditions change dramatically over short time periods in these  
13 markets (as Mr. Shandalov concedes in his testimony).<sup>34</sup> A supplier cannot be  
14 certain exactly what has already been procured or negotiated with other  
15 suppliers. Suppliers in California's market will not have the benefit of "real  
16 time" updates, in contrast to the real-time data revelation scheme used in  
17 Professor Plott's experimental study.

18 Professor Plott's experimental study also fails to take into account the  
19 safeguard against strategic behavior introduced by the three year confidentiality  
20 window. In fact, Professor Plott notes that the price impacts he observed in his  
21 experimental study are concentrated in the initial rounds of negotiation, "during  
22 the equilibration phase of market interaction."<sup>35</sup> This implies that the price  
23 impact is muted over time<sup>36</sup>, and that the buyers (IOUs) may be able to arbitrage

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<sup>33</sup> However, initiatives spanning as long as ten years are possible under current procurement policies.

<sup>34</sup> See Shandalov at 18.

<sup>35</sup> See Plott's Exhibit A at page 14.

<sup>36</sup> Professor Plott notes explicitly that "pricing advantages can persist even after prices converged to equilibrium, **as long as** the equilibrium contains a relatively **wide range** of prices. (emphasis added). See page 16 of Plott's Exhibit A. Intuition would suggest that a narrow range of prices is more likely. To the extent that the buyers are procuring for their "on-peak" needs (rather than for their needs in each



1 away the upward price pressure over time, especially if one considers the menu  
2 of transaction options available to buyers (and suppliers) and the time dimension  
3 of the procurement processes versus the stylized market environment utilized in  
4 the experimental study.

5 The aggregated summary tables will show total demand and total  
6 resources; the NOI does not propose to reveal the IOUs' marginal value of  
7 energy supply, which is exactly what the experimental study assessed. Professor  
8 Plott notes in his discussion that with the exception of "two Design C sessions",  
9 the "sellers received [detailed information about the minimum value that units  
10 were worth to buyers] before the first period and they were continuously kept up  
11 to date about changing information about the buyers."<sup>37</sup> This is a severe  
12 abstraction of the reality of the NOI proposal. The aggregated summary tables as  
13 proposed in the NOI would be equivalent to a single quantity point in contrast to  
14 the entire set of price and quantity pairs for each buyer that the experiment  
15 releases to suppliers. Moreover the NOI does not envision that the aggregated  
16 summary tables would be updated on a continuous basis over time. Indeed there  
17 will be a "reporting gap" as discussed above. However, the aggregated  
18 summary tables will still allow suppliers to re-calibrate their information set,  
19 which should provide for some risk reduction benefits, as discussed previously.

20 IOUs' concerns about market manipulation effectively treat the many  
21 current electricity suppliers as if they were as a single entity or as if they behaved  
22 in a coordinated fashion. This presupposes some sort of coordination or tacit  
23 collusion in the procurement process. Professor Plott frankly acknowledges his

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independent hour), their procurement strategy would be focused on a very concrete set of ("on-peak") demand conditions (rather than the entire set of varying hourly demand conditions). Thus intuition would suggest that their willingness to accept market prices would be defined by a narrow range of prices, subject to the intersection of "on-peak" demand and their expectation of supply (based on market conditions at that point in time). Moreover, this range of willingness to pay by the buyers would have been refined and further narrowed as a result of the information learned from previous negotiations.

<sup>37</sup> See Plott's Exhibit A at page 11.

1 objective in analyzing the “incentives among competitors that also foretell  
2 upward pressure on prices.”<sup>38</sup> At the same time, he never discusses whether the  
3 collusion (and higher prices) is the result of the trading mechanisms implied in  
4 the experiments or the underlying assumed market structure. For example, it is  
5 unclear from Professor Plott’s testimony whether the experimental sessions  
6 accurately paralleled the number of buyers and suppliers actually present in  
7 today’s California market. It is however evident that the experiments’ trading  
8 mechanism were a simplified abstraction of the complex, inter-temporal trading  
9 regimes in California’s electricity market.

10 The classic economics text on the subject of tacit collusion, the *Theory of*  
11 *Industrial Organization*, by Jean Tirole, gives conditions under which tacit  
12 collusion is likely to be successful. First, the market participants must be able to  
13 see each other’s prices, so as to punish firms that undercut the other  
14 collaborators. Because the precise contract terms between the IOUs and the  
15 suppliers will remain confidential, this condition will not hold perfectly in the  
16 current and foreseeable market context in California. The second major condition  
17 for tacit collusion to be viable requires that all suppliers have very similar  
18 (symmetric) cost structures. Given the diversity of the generation portfolios held  
19 by suppliers serving the California market, this condition is also not easily met.  
20 A third market condition that promotes tacit collusion is the presence of a high  
21 concentration of suppliers. This is clearly not the case in California given the  
22 numerous generators in state and in surrounding markets. As the necessary  
23 conditions for tacit collusions are weakly, if at all, present in the California  
24 market, it is incorrect to presuppose that tacit collusion among suppliers is  
25 present. In fact, the lack of a transparent centralized price by which punishment  
26 can be made credible indicates that some suppliers are going to be heavily

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<sup>38</sup> See Plott at 12.

1 incentivized to deviate from a collusive target and offer their supply at lower  
2 prices in order to secure contracts – in other words, aggressive competition is  
3 more likely than tacit collusion.

4 Notably, similar if not more detailed data was released (or was already  
5 available) in recent full-requirements procurement processes for retail load in  
6 several Northeast jurisdictions, as well as in similar procurement processes in the  
7 Western Interconnect. In spite of the release of such supply-demand information,  
8 the competitive nature of the processes was not harmed and the results of these  
9 procurement processes were generally consistent with prevailing wholesale  
10 market conditions. Below, I provide some brief details about two such  
11 procurement processes in the Northeast, as well as the recent RFO for Arizona  
12 Public Service (“APS”).

13 *Connecticut Light & Power’s Transitional Standard Offer (TSO) Procurement*  
14 *Process, November 2004:* Connecticut’s Transitional Standard Offer (“TSO”),  
15 effective through December 31, 2006, was created to establish electric rates for  
16 those customers that were still on the TSO plan (i.e., had not switched to a  
17 competitive supplier). The TSO regulation specifically required that the cost of  
18 electricity, the Generation Supply Cost (“GSC”), be based on competitive market  
19 rates which reflect the actual cost of retail service provision, thereby sending  
20 proper price signals to Connecticut ratepayers about the electricity they  
21 consume. Thus, Connecticut’s two distribution companies were required to  
22 conduct a competitive procurement process. The main purpose of such a process  
23 was to minimize the total cost of the GSC. A second, but equally important, goal  
24 was to ensure that the procurement process did not give the utilities’  
25 unregulated generation affiliates an unfair advantage.

26 CL&P and United Illuminating had separate procurement processes. For  
27 each process, the utility released a detailed set of historical and forecast demand

1 data aimed at providing potential suppliers with an accurate picture of the  
2 utility's supply needs. For example, in Connecticut Light & Power's ("CL&P")  
3 2004 auction for TSO supply for 2005 and 2006, CL&P released historical hourly  
4 load data from 2000 through August 2004, forecasted energy requirements and  
5 peak load by block<sup>39</sup> for each month and term (the terms were 2005 and 2006),  
6 forecasted hourly load for 2005 and 2006, average load profiles for each of  
7 CL&P's different customer class segments, and the number of CL&P customers  
8 by customer class segments. In addition to the information provided directly by  
9 CL&P, potential suppliers had access to supply-demand dynamics, transmission  
10 constraints, and other developments within New England and specifically in  
11 Connecticut. For example, the *2004 Regional Transmission Expansion Plan* ("2004  
12 RTEP") published by the Independent System Operator of New England ("ISO-  
13 NE") was available at that time and provided detailed data spanning the next ten  
14 years at a New England, Connecticut state, and Southwestern Connecticut sub-  
15 region level regarding forecasted annual load, peak load (under 90/10 and 50/50  
16 weather conditions for both summer and winter), reserves, total installed  
17 capacity, unavailable capacity, import limits, as well as other likely sources of  
18 supply. In addition to this, RTEP also provides supply-demand forecasts at a  
19 sub-regional level under a host of different scenarios, with accompanying energy  
20 price projections, for the next ten years.

21 The release of CL&P's information and the availability of other detailed  
22 market information, such as that contained in the 2004 RTEP, did not result in  
23 any manipulation or gaming of the market. Indeed, in my role as the auction's  
24 monitor alongside with the staff from the Connecticut Department of Public  
25 Utility Control ("DPUC"), I testified to the DPUC Commissioners that "CL&P's

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<sup>39</sup> The CL&P auction, which was for approximately 5,000 MW of peak demand, was split into eight blocks of 625 MW of supply.

1 TSO procurement process was fair and impartial to all participants.”<sup>40</sup> I found  
2 that the bids in the auction were in line with New England wholesale market  
3 conditions at that time.

4 *New Jersey’s Basic Generation Service (“BGS”) Auctions:* Starting in August  
5 2002, the New Jersey Electric Distribution Companies (“EDCs”) have used an  
6 annual auction mechanism to procure their default supply obligations (BGS) for  
7 those retail customers who had not switched to competitive suppliers. Based on  
8 the regulation implemented alongside this process, the resulting auction prices  
9 would be approved by the state regulator (the NJ Board of Public Utilities  
10 (“BPU”)) and passed on to end customers, as long as certain protocols were met.  
11 Similar to the TSO process in Connecticut, the objective for using the auction  
12 mechanism was to procure electricity supply for NJ’s BGS customers at a cost  
13 consistent with wholesale market conditions. Indeed, the BGS auctions have been  
14 credited with facilitating the development of a more competitive wholesale  
15 market by some observers.

16 In the auction process, the retail load was subdivided into two types – an  
17 “FP” class, serving smaller retail customers; and a “CIEP” class, serving large  
18 industrial clients. During these auctions, bidders bid on full-requirements  
19 tranches - each tranche representing a fixed share of the load, based on the peak  
20 load for each utility – for these loads. The winners were obligated to provide full-  
21 requirements service, including capacity, energy, ancillary services and  
22 transmission, and any other services required by PJM (the wholesale market  
23 operator and regional transmission organization).

24 To facilitate the bidders’ estimates of their obligations, the EDCs released  
25 extensive data. Each utility released several years’ worth of hourly load, daily

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<sup>40</sup> Affidavit of Julia Frayer to the CT DPUC in Docket No. 03-07-18PH02, Establishment of the Process for the Procurement of Transitional Standard Offer, November 8, 2004.

1 peak, and transmission data. The data was also broken down by FP and CIEP  
2 classes and by actual and forecast BGS load. Data was also provided on customer  
3 switching. As in CT's TSO process, suppliers also had access to a variety of other  
4 market intelligence, including PJM's extensive supply-demand forecasts by sub-  
5 region, analysis of binding transmission constraints, and consideration of  
6 potential new entrants (based on interconnection queues).

7 The release of such detailed information did not result in any  
8 manipulation or gaming of the market. In fact, the consultant retained by the  
9 BPU to monitor the annual auction results has recommended that the BPU accept  
10 the auction outcome as fair in every year since the inception of this procurement  
11 process.

12 The success of such information disclosure in a procurement setting is not  
13 unique to the Northeast. As part of its March 31, 2005 RFO process, APS  
14 specifically released its resource plan summary tables as part of the procurement  
15 process. In this release, APS provided information about its annual energy and  
16 capacity needs, resources, and net position. APS also provides monthly data  
17 about energy usage, broken into category of resource and monthly need for the  
18 resource, a much more detailed data provision than is envisioned under any of  
19 the NOI proposals.

20 7. **Release of the aggregated summary tables may be efficient for overall**  
21 **market operations in the long run and in the ratepayers' interests. The**  
22 **information encapsulated in the aggregated summary tables will provide**  
23 **accurate and necessary signals on the need for new generation investment,**  
24 **further supporting the development of a robust competitive electricity**  
25 **industry and secure, least cost supply for ratepayers.**

26 Restructuring has eliminated the centralized nature of planning and  
27 system expansion prevalent under the previous model of vertical integration in

1 California. Nevertheless, even in a restructured (deregulated) market  
2 environment, there is still a basic need for informal, yet centralized, coordination  
3 of investment needs. The CAISO has taken on some of this role as coordinator  
4 with its analysis of economic transmission needs within its control area. The  
5 CEC has also been tasked with a “coordination” role through the IERP process.  
6 The information embodied in the aggregated summary tables would indicate the  
7 investment requirements of the system in the long term to the various market  
8 participants and thus allow the CEC to fulfill its duties in this regard.

9 The potential for new investment is part of the market landscape in  
10 California. This observation is underscored by the standardized process for  
11 permitting and siting new generation in the state - a regulatory feature that has  
12 undoubtedly supported the development of new generation in the state. New  
13 generation offers an expansion of the possible universe of suppliers that buyers  
14 can procure from. The analyses presented by the IOUs generally ignore this  
15 potential. This is not surprising, since the IOUs’ acknowledgement of the  
16 dynamic, long run benefits of information dissemination for motivating  
17 investment would offset their concerns about market manipulation among  
18 existing suppliers.

19 For example, Professor Plott’s experimental study looks at short-term  
20 dynamics. Though Professor Plot observes higher prices on average in the initial  
21 rounds (sessions) of negotiations in the simulations, he also assumes a static  
22 environment with no new entry. In fact, Professor Plott concedes that on the  
23 basis of higher prices, his study “does provide indirect evidence that entry could  
24 be attracted by greater information dissemination...”<sup>41</sup> Experience in power  
25 markets worldwide has shown that expectations about long-term supply-  
26 demand balances attract investment simply on the face value of the *expected*

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<sup>41</sup> See Plott’s Exhibit A at page 2.

1 aggregate shortfall between supply and demand. Indeed, such a phenomenon  
2 clearly occurred in New England in the late 1990s. In 1997, New England's  
3 summer reserve margin ranged from just above 0% to 3% for June through  
4 August of that year, resulting in major efforts by the system operator to maintain  
5 sufficient resources to meet the summer's demand.<sup>42</sup> NERC's 1997 reliability  
6 assessment identified this capacity shortage as a problem not just in the short  
7 term but also potentially through the beginning of the next decade. This  
8 triggered a major generation capacity development cycle in New England, with  
9 about 1,500 MW of capacity coming on-line in 2000 and in 2001 and a heady  
10 2,800 and 2,900 MW in 2002 and 2003.<sup>43</sup> These increases in capacity, driven by  
11 the tight supply margins exhibited by the region from 1997 through 1999,  
12 resolved the region's supply shortage, resulting in a current healthy supply  
13 margin in New England of more than 20%.<sup>44</sup> Accordingly, the amount of  
14 capacity that has recently come on line is much lower than the early 2000s: less  
15 than 600 MW came on line in 2004. Such a phenomenon was also observed in  
16 ERCOT in the late 1990s. ERCOT's reserve margin decreased from 19-24% over  
17 the summer of 1996 to 13-18% in 1999, encouraging the development of large  
18 amounts of additional capacity in the region.<sup>45</sup> Indeed, more than 5,000 MW  
19 came on-line in 2000 and more than 7,000 MW in 2001.<sup>46</sup>

20 Professor Plott's supposition that "competition itself is reduced"<sup>47</sup> would  
21 in fact be reversed in the long term due to the introduction of new supply  
22 resources (either from new build in California or re-directed resources from  
23 surrounding regions), if his experimental study allowed for this dynamic

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<sup>42</sup> NERC Summer Supply Assessment, 1997.

<sup>43</sup> ISO-NE data.

<sup>44</sup> NERC Summer Supply Assessment, 2004 and 2005.

<sup>45</sup> NERC Summer Supply Assessment, 1996-2000.

<sup>46</sup> Public Utility Commission of Texas, *Generation Projects Completed in Texas Since 1995*, February 2005.

<sup>47</sup> See Plott at 10.



1 response to prices and informational expectations. In other words, to the extent  
2 that there are no artificial barriers to entry, new supply will discipline the  
3 manipulation that the IOUs so strongly fear.

4 Moreover, if aggregated summary tables on supply-demand balance are  
5 not allowed to be released, substantial uncertainty on future market conditions  
6 will remain, especially if the current base of knowledge deviates from utilities'  
7 expectations about their needs in the long term. New long term supplies will not  
8 materialize and the higher prices that the IOUs fear will be realized, but precisely  
9 because the IOUs withheld beneficial information for new investment. Michael  
10 Spence's 1973 seminal work served as a foundation of "signaling theory."<sup>48</sup> In  
11 this paper, he uses education to lay out a theory: job market participants signal  
12 their quality by their decision to pursue education.<sup>49</sup> The theory developed by  
13 Spence and others suggests that when one market participant has information  
14 that is unknown to the counterparties, and is favorable to future interactions, it  
15 will make sense to communicate that information. Moreover, signaling theory  
16 also suggests that when one market participant has information that is unknown  
17 to the counterparties, it may be able to improve its own position by  
18 communicating the private knowledge. In the current context, where the IOUs  
19 are the best informed about the future supply-demand balance, they can  
20 encourage the market to make the optimal investment in generation by making  
21 releasing their expectations through the aggregated summary tables. Indeed, the

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<sup>48</sup> Signaling theory has been one of the most studied areas of economics since it was introduced. Indeed, it has been deemed important enough that its three main developers, George Akerlof, Michael Spence, and Joseph Stiglitz received the Nobel Prize in economics in 2001 for their contributions. Key writings on signaling theory include George Akerlof "The Market for Lemons: Quality Uncertainty and the Market Mechanism" *Quarterly Journal of Economics* 1970; Michael Spence "Job market signaling" *Quarterly Journal of Economics* 1973; Joseph Stiglitz and Michael Rothschild "Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information" *Quarterly Journal of Economics* 1976; I-K Cho and D. Kreps "Signaling Games and Stable Equilibria" *Quarterly Journal of Economics* 1988; A. Mas-Collel, M.D. Whinston, and J.R. Green, *Microeconomic Theory* (Oxford University Press) 1995; Drew Fudenberg and Jean Tirole, *Game Theory* (The MIT Press) 1992.

<sup>49</sup> Spence, Michael "Job market signaling" *Quarterly Journal of Economics* August 1973, pg. 355-379.

1 non-release of this long-term aggregated supply-demand data could lead to  
2 higher prices and possible lapses in reliability. Even if for the moment we accept  
3 the IOUs' arguments of higher prices and specifically rely on Professor Plott's  
4 experimental study (where moderate average price differentials in the 7% to 8%  
5 range<sup>50</sup> were observed), the cost to ratepayers of correcting under-investment in  
6 the long run is likely to far exceed the increased cost of procurement over the  
7 short-term as the market converges towards equilibrium prices. Now if we take  
8 into account the actual market structure (with many suppliers) and the actual  
9 characteristics of the proposed aggregated summary tables, near term prices may  
10 actually fall with the release of the information in the aggregated summary tables  
11 (due to the risk-reducing effects of public value information that substitutes for  
12 and refines the existing private information). We must also consider other  
13 ratepayer benefits that will be created by the information release. These include  
14 the possible trading efficiencies that were not captured in Professor Plott's  
15 experimental study<sup>51</sup> and the long term ratepayers' benefits offered through  
16 signaling for investment.

- 17 8. **Concluding Remarks:** In my practical experience and based on well  
18 accepted economic theories surrounding auction design and information access, I  
19 believe it would be beneficial to ratepayers and imperative for efficient long run  
20 market dynamics to have aggregated long-term supply and demand information  
21 in the public domain. Such information would provide constructive signals for  
22 new investment for suppliers and investors. The "manipulation" and "higher  
23 price" concerns raised by the IOUs would, in turn, be ameliorated through the  
24 introduction of new investment (and even perhaps through the expectation of  
25 the introduction of new supply). In summary, the aggregated summary tables

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<sup>50</sup> See Plott's Exhibit A at page 14.

<sup>51</sup> Id.

1 that the IOUs are asking to suppress from public circulation are not confidential  
2 and their release should enhance current signals for necessary new investment in  
3 California's electricity sector and thus be beneficial to ratepayers.

4 Though Professor Plott's experimental study is innovative and on the  
5 cutting edge of experimental science, it necessarily simplifies (as all studies have  
6 to) real world conditions and thus does not consider nuances related to the  
7 differences in the quality of information revealed, the timing of the information  
8 revelation process and the timestamp of the underlying data, the degree of actual  
9 competition in the market based on the number of participants and structural  
10 complexity, the impact of potential new entrants, and the ramifications of the  
11 flexibility and multitude of options available to buyers and sellers to transact  
12 over time. Thus, the study conclusions, though robust in the experimental  
13 framework, may not be as applicable to the actual California market.

14 I declare under penalty of perjury under the laws of the Commonwealth  
15 of Massachusetts that the foregoing is true and correct.

16 Executed on June 8, 2005 at Boston, Massachusetts.

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Julia Frayer

## Appendix A: Resume for Julia Frayer

### KEY QUALIFICATIONS:

As Managing Director of LEI, I currently direct many of the company's engagements involving market design and policy making in electricity markets, particularly with respect to auction design and market power regulations. I have provided consulting services to many clients on auction design practices for the energy sector for both physical assets and financial derivatives, including recommendations on selecting auction formats for the sale of physical generating assets as well as financial energy-related products, market rules to enhance competition, and holding restrictions to limit collusive behavior and uncompetitive market outcomes in the aftermath of the auction process.

As director of many of the quantitative engagements at LEI, I have also led many projects involving strategic bidding and simulation modeling in the power sector, including economic support in mergers and acquisitions, development of trading strategies, and contract negotiations. For example, I have advised industrial clients on procurement strategies and assisted in their contract negotiations with suppliers. I have also participated in the buy- and sell-side of generating asset divestiture processes in markets worldwide, including in California's original asset divestitures, where I led a team of economist developing the long-term economic valuation of various utility assets. In 2001-2002, I co-led a large engagement for the California ISO and various California stakeholders, for which we designed a prototype economic transmission evaluation framework that incorporated the complex interactions between transmission expansion and generation, assessed the value added of market power mitigation from transmission expansion, and explicitly valued the real option to delay investment in the cost-benefit analysis. Key elements of the methodology were implemented by the CAISO and are currently in use by the transmission planning department to assess the economic benefits of potential wires projects.

I have also presented testimony in arbitration and mediation proceedings involving contract disputes and the impact of new, unanticipated, information on bidding practices and market price settlement processes in a deregulated wholesale energy market in North America. I have also provided testimony on the competitive effects of mergers and market power issues at the Federal Energy Regulatory Commission ("FERC"), as well as in front of the Public Utility Commission of Texas ("PUCT") and in front of other state regulators.

I have also advised on retail market issues in the electricity sector. For those customers seeking to buy electricity, I have provided forecasts of wholesale and retail electricity rates and recommended procurement strategies based on their consumption profiles and market expectations. Last year, I assisted Connecticut's Department Of Public Utility Control's ("DPUC") Utility Operations and Management Analysis unit in monitoring the power procurement processes for Connecticut Light & Power's ("CL&P") Transitional Standard Offer ("TSO") auction in November 2004. I provided testimony evaluating the auction process to the DPUC.

## **EDUCATION:**

Graduate School of Arts & Sciences, Boston University (1996-97) **M.A.** in Economics  
College of Arts & Sciences, Boston University (1994-97) **B.A.**, Summa Cum Laude, in Economics and International Relations, member of Phi Beta Kappa

## **EMPLOYMENT HISTORY AND SAMPLE PROJECT EXPERIENCE:<sup>52</sup>**

**From:** February 1998

**To:** present

**Employer:**

*London Economics International LLC*

- *Testimony at FERC on behalf of intervenor in proposed Exelon-PSEG merger related to wholesale market issues in generation per Section 203 of the Federal Power Act:* Julia provide direct and supplemental testimony outlining key considerations relating to the potential for adverse competitive effects in light of the proposed merger and recommended additional mitigation measures to cure horizontal market power concerns through independent analysis of merger's impact on wholesale energy and capacity markets in PJM.
- *Advisory to the Alberta Department of Energy on market power safeguards for the Alberta electricity sector:* As part of the London Economics team, Julia managed the theoretical analysis and quantitative simulation modeling in the design and testing of recommended new regulatory regime. Analysis and recommendations will be presented to stakeholders in the spring of 2005.
- *Economic Support of generation acquisition by investment funds in PJM:* Julia is leading a due diligence team and assisting in the exclusivity negotiations with respect to an acquisition of a 400+ MW coal fired plant in the PJM market by a group of private investors. Julia's role included management of LEI's economic appraisal,

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<sup>52</sup>

This is a sample of relevant engagements. Not all projects included.

coordination of preliminary technical due diligence, negotiations with third parties on possible of-take arrangements, and oversight over financial modeling.

- ***Economic analysis and expert testimony in front of the Public Utilities Commission of Texas on market power related issues:*** prepared and filed testimony and quantitative analysis on questions of market definition and market integration. In June 2005, Julia participated on panel discussing market monitoring issues, as well as market power safeguards for wholesale electricity markets. In 2004, she also provided testimony on pricing safeguards proceeding, which looked at alternative market power testing procedures for market power, analyzed implications on investment, and discussed efficiency consequences of certain bidding behavior.
- ***Contract analysis and risk management:*** Julia led analysis of large market participants' collar contract positions within its overall portfolio-wide risk management strategy in Northeast market. Analysis and risk management recommendations will be presented to Board of Directors.
- ***Asset optimization for international generation-only company:*** Using application of methods and quantitative techniques from Modern Portfolio Theory, Julia participated on LEI team working on a first stage review of a multinational firm's generation asset holdings, scope for efficiency improvements, risk reduction, and identification of areas for increased diversification potential.
- ***Preparation of analysis for generation market power under FERC's indicative screens for market based rate authorization:*** In support of various acquisitions by Brascan and Emera in the Northeast announced in 2004, Julia has prepared and continues to be involved in expert testimony for Market-based Rate Authorization applications, Triennial Reviews, and Section 203 filings. All applications to date have been successfully accepted by FERC.
- ***Market analysis and forecasting for IPP developer in Ontario in response to Ministry of Energy's RFEI for 2,500 MW of clean energy:*** Julia directed the quantitative analysis and wholesale electricity price forecasting completed for an IPP. Projections were used to justify project sponsorship of a small gas-fired plant in front of the IPP's Board of Directors and led to project submission to RFEI. In addition, Julia and her team of economists designed a risk model for the client to evaluate the contract payment risks vis-à-vis actual dispatch.
- ***Resource adequacy workshop:*** Julia co-presented at an IPPSA-sponsored workshop in Alberta on resource adequacy market institutions, specifically speaking to the

installed capacity and locational installed capacity markets implement in the US among certain Northeastern ISOs.

- ***Econometric analysis of the elasticity of demand for transmission services between Canadian provinces and US markets in the Northeast:*** Julia led the economic analysis for an IPP investigating the impact on trade from increased transmission costs, involving multi-factor regression analysis of nodal electricity prices, price spreads across markets, and interchange flows (imports and exports) across borders. Analysis will be used as evidence in a regulatory hearing for proposed tariff changes.
- ***Monitoring of 5,500 MW RFP for energy services for standard offer contract issued by Connecticut-based utility:*** the Department of Public Utility Control of Connecticut retained the services of LEI to assist the DPUC in monitoring the power procurement processes for Connecticut Light & Power's (CL&P) Transitional Standard Offer auction in November 2004 for services in 2005 and 2006. Julia led LEI's team in providing advisory services to the DPUC, including guidance on communications protocols, design of sales contract agreement (between CL&P and winning bidders), and also valuation of final bids vis-à-vis the forward market alternatives available to the utility. Julia filed an affidavit after completion of the process which the Commissioners used to approve the process and the contracts between CL&P and the winning bidders.
- ***Economical advisory on market power mitigation tests:*** for a large US-based utility in the Southwestern part of the US, consulting on market design features related to a proposed nodal market, including most significantly the market power analysis framework. LEI proposed strategy and is assisting in the development of an implementation framework for the local market, including prepared reports for the market design team and state commission. In addition, the approach will be proposed for federal review at FERC.
- ***Analysis of LMPs in New England:*** using well-established econometric techniques, analyze location-based marginal prices in New England since inception of the new nodal system. Assess the node-specific marginal loss and congestion premiums for certain assets located in load pockets. Analysis integral to a valuation of a portfolio of generation assets and power supply agreements.
- ***Economic advisor to large European power company in its acquisition of an electric distribution franchise in Eastern Europe:*** Julia, along with her team members, assisted a large European power company in its acquisition strategy in Romania. Project involved government and stakeholder consultations, proposed modifications



to market design and regulatory structure, including the implementation of a performance based ratemaking regime. London Economics was also responsible for forecasting tariffs - which were an integral part of the overall financial model and supported the proposed purchase price.

- ***Assessment of Austrian hydroelectric generation:*** Julia was asked to provide an economic opinion for a US-based investor involved in a cross-border acquisition of certain hydroelectric assets. Julia's opinion detailed the appropriate WACC and price forecast that should be used in the valuation, based on current and proposed structure of the power market, and provided an assessment of the marketability of the service contract involving an exchange of market-based revenues (energy and ancillary services) for a fixed cash payment between the owner of the assets and an independent counterparty. For this project, extensive financial analysis of reasonable costs of capital for generation-only investments was done, including adjustment factors for various risk factors unique to hydroelectric assets. In addition, LEI performed a multi-scenario financial analysis of the service contract based on projected exchange of funds.
- ***Valuation of a pumped storage facility:*** in support of an asset bid by a multinational player, Julia and her team of economists and modelers completed a medium-term analysis of potential peak versus off-peak price trends in a key Eastern Interconnect market. The price forecast was based on both network simulations using marginal cost-based bidding and strategic bidding. The strategic bidding analysis was based on an innovative algorithm, referred to as ConjectureMod, developed by LEI in consultation with a well-known game theorist in electric power markets.
- ***Extensive economic support of a private client's acquisition of a New England-based generating portfolio:*** as part of an on-going engagement, Julia is assisting a large Canadian private client in its acquisition of a large New England generation portfolio. Julia and her team supported the client's valuation team, providing extensive forecasting and revenue modeling support for the bid development, due diligence, and cost-benefit analysis of key components of the portfolio (which contains an assortment of power plants, ranging from coal-fired facilities to hydro units, and other power sector-related assets, such as transmission rights contracts, power purchase agreements, and power supply obligations). London Economics, with Julia's support, is currently working on FERC filings in anticipation of the acquisition, which will assess the market power attributes of the transaction, per Section 203 requirements. In addition, London Economics' quantitative and modeling analysis will be used to support securitization and credit rating efforts which may include the acquired assets.



- ***Development of a methodology for transmission assessment for the CA ISO:*** LEI, in association with Professor Robert Wilson of Stanford Business School, ECCO, and Dr. John Smalls, was engaged by the California Independent System Operator (CAISO) to construct a framework for the economic valuation of transmission investment. Though grounded in a cost-benefit analysis approach, the methodology moved beyond traditional valuation frameworks and incorporated concepts from real options investment analysis and game theory, and included innovative techniques for forecasting market power implications for wholesale power markets. In the last phase of the project, LEI demonstrated the practical application of the methodology to a real-world transmission investment. The work, completed jointly with the CAISO, was filed with the CPUC in late 2002. As a result of this work, LEI developed a linear program model, which combined with econometric techniques, helped resolve and evaluate the question of generation and transmission interdependence. Key elements of this project have been implemented in CAISO's current valuation practices of economic transmission investment projects.
- ***Support the Balancing Pool on economic issues related to the MAP II sale of dispatch rights associated with key generation assets currently controlled by the Balancing Pool:*** conducted an in-depth analysis of current and future market outcomes under a variety of ownership structures (required multi-year simulation modeling of strategic behavior using CUSTOMBid) for energy and ancillary services market in Alberta, quantitative analysis served as foundation for the design of efficient holding restrictions that would be applied to the sale of the Clover Bar, Sheerness, and Genesee contracts; consulted the Balancing Pool, MAP Committee, and associated parties on sale process and auction design principles; provided an independent valuation of the contracts using an options-based approach based on London Economics' proprietary spark-spread model.
- ***Determination of reasonable rates and subsidy payments for a water business in Germany, as part of US cross-border lease transaction:*** managed an economic valuation and forecasting exercise in support of a combined \$1 billion plus transaction involving several wastewater and freshwater systems (treatment facilities and collection and distribution networks) in Germany. As part of the economic analysis, forecast reasonable rates for the water and wastewater businesses based on true cost recovery principles. In addition, provided industry expertise in the design of a subsidy mechanism, to overcome certain legal obstacles in local jurisdiction's laws with respect to return on investment vis-à-vis fair market value.
- ***Evaluation of a structured financial agreement (swap) or service contract with respect to district heating network in Austria:*** directed the economic analysis of the

financial instrument which involved the quasi-securitization of the income streams of a district heating distribution business in Austria; supported the legal counsel in the due diligence process and contributed to the design of the transition structure with respect to the financial arrangement; analysis and final opinion provided backing for a US cross-border lease.

- ***Valuation of international transmission project:*** using a real options application involving locational price spreads, designed specifically for this engagement, Julia and her team of economists quantified the congestion rents expected to be earned by the developer of an international transmission line in North America and thus evaluated the private benefits to the transmission owner.; financial model constructed for developer to use in analyzing economics of the project on an on-going basis, in order to win Board approval and negotiate risk-sharing contract terms with co-sponsor.
- ***Preparation of valuation for a successful bid in a generation auction in Ontario:*** Julia assisted Brascan Energy in the valuation of the Mississauga hydro portfolio, which they acquired through a successful bid, from Ontario Power Generation. Economic analysis involved the use of LEI's market power analysis (using London Economics' proprietary game theoretic model of strategic behavior), LEI's production cost-based simulation software, POOLMod, and London Economics' tailored real options-based approach for hydro assets. As part of this engagement, LEI staff participated in the initial round analysis, aided in the due diligence process, and consulted the client on second-round bidding.
- ***Market study of the Southeast US and projection of power purchase options for a 400-MW load facility siting at the cross-roads of several Midwest and Southeast markets (SERC, SPP, MAIN, and MAPP regions):*** in advising a large industrial customer on its power supply options (buy or build) over the medium-term, LEI conducted a joint economic and technical study of the power markets and transmission systems in the Southeast market; Julia coordinated the engineering assessment, involving extensive analysis of the security of the transmission grid through load flow analysis and contingency tests. Economic analysis build upon the transmission topography defined in the technical assessment and provided the client with a medium-term independent outlook on wholesale energy prices for the market, based on regional configuration and realities of the transmission system in this part of the country. LEI's POOLMod production cost simulation software used to complete the forecast.

- ***Economic feasibility study of a New York City cogeneration facility, a Western New York peaker, New York City CCGT (various clients):*** for a developer, prepared a ten-year revenue forecast for a proposed cogeneration facility, including a forecast of energy and capacity revenues (namely intrinsic revenues) and a volatility or real options-based adder (extrinsic revenues) for the New York City zone of the NY ISO. Analysis was used in support of board approval and aided in the design of the project (e.g., choice of technology and flexibility of such technology vis-à-vis expected market outcomes). For another private client, conducted a longer term projection (spanning 20 years) for a peaking power generation project in Western New York, producing a forecast for regional energy, installed capacity, options-based adders, and ancillary services revenues streams.
- ***Implementation of real options modeling framework:*** conducted numerous valuation exercises using real options-based framework for generation assets and transmissions rights for a variety of engagements, including asset valuation, and structuring of transmission rights portfolio.
- ***Valuation of Mid-Atlantic utility (private client), 2001:*** co-led economic aspect of valuation process for potential acquisition of Mid-Atlantic utility for international entity. Analysis included valuation of PJM-based generation portfolio through the use of production cost-based models and real options applications. Julia also coordinated evaluation effort for trading entity and regulated asset base (wires assets), including review of exposure due to provider of last resort obligations. Julia and her team of economists assessed contract portfolio and load growth parameters, as well as mitigation measures employed by target utility.
- ***Review of innovative leasing deal for electric and gas networks:*** for set of investment banks, performed engagement reviewing ownership arrangements for network assets, revenue drivers, and contract structure. Led detailed net benefit analysis for innovative swap structure, involving the cash flows from the network assets under performance-based regulatory regimes.
- ***Modeling of the future value of emissions reduction credits in regional, continental and global emissions trading markets:*** on behalf of large multinational client, Julia completed a study of the short to long term dynamics of the emissions trading markets. The majority of the focus was on greenhouse gas emissions and the potential for trade-able instruments in North America based on recent publicized transactions and pilot trading programs. However, discussion of current US emissions trading markets (for nitrogen oxide and sulfur dioxide) and their relative features was included in the report.

- ***Valuation of Ontario generating facilities, including assessment of regional electricity markets:*** organized and implemented major modeling effort to determine potential value of generation stations in Ontario. Assessed impact of transmission constraints and restructuring efforts in neighboring markets on future wholesale market prices; forecast competitive market price for Ontario over the long term with detailed review of market dynamics and key price formation drivers; projected the reaction of key market players and the implications of their actions of market prices over the near term utilizing proprietary game theoretic model.
- ***Measurement of contract exposure under a series of PPA contracts and its effect on enterprise value:*** this study was done in conjunction with a due diligence process, where London Economics was part of team analyzing a potential merger between an international power producer and diversified US utility. In identifying key issues in merger between these two entities, London Economics was given the task of defining and quantifying the liabilities associated with the US utilities' power purchase agreements. Julia lead the analysis on behalf of London Economics in the due diligence process: constructing a theoretical framework and applying it to complex asset swap and power purchase agreements in order to measure the magnitude of the liability via current and forecasted market conditions.
- ***Valuation of renewable portfolio of US-based IPP (ERGA's acquisition of CHI Energy):*** Julia co-led market analysis on behalf of ERGA (subsidiary of Italy's electric utility, ENEL) and its investment bankers in their successful acquisition of CHI Energy (a renewable generation IPP player). Tasks included detailed review of key NUG contracts, overview of regional power markets, price forecasting for half-dozen power markets, sensitivity analysis, and strategic going-forward assessment.
- ***Surveyed the current US environmental regulatory framework for international client and produced detailed compliance cost analysis for US generation asset operators:*** investigated current and future policy guidelines (including stay of OTAG program by Federal Courts), outlined key regulation and emission protocols under EPA's Acid Rain Program, Ozone Transport Regulation and New Source Review, measured the cost of compliance options for US generators through analysis of forecasted allowance prices, and the cost of technological mitigation implementation (BACT) and other emissions reducing initiatives (e.g. coal switching, operational guidelines). As a final product, Julia authored a working paper that laid out the multiple layers of environmental regulation for generators in the US with a detailed case study, defining the technological and cost impacts of this regulation on one large US utility.

- ***Review of market dynamics in the California market as part of generation asset valuation:*** London Economics was hired by leading financial institutions to review the long term energy, ancillary services, and capacity price forecasts for Southern California and resulting revenues for a set of assets that were undergoing debt financing. As part of this investigation, Julia drafted a critique of the proposed price forecast and suggested methodology improvements and a set of alternative price benchmarks for debt financing valuation purposes.
- ***Valuation of distribution assets:*** quantified synergies and developed strategies for potential cross-border transaction between top Canadian distribution corporation and affiliate of Top 20 US utility, by performing in-depth analysis of diversified strategies available to global energy companies in energy generation, transmission, distribution, wholesale and retail marketing, energy services, and other infrastructure industries. Julia co-managed a team of economists and consultants, pursuing unique valuation approaches in this transaction, utilizing comparable analysis, examination of PRB mechanisms and other regulatory pricing designs, growth strategies, as well as the application of real options theory.
- ***Midwest price forecasting:*** Julia headed the analysis of long-term price forecasts for the Midwest US (ECAR, MAIN, and MAPP); managing a team of economists in their effort to establish fifteen-year energy and capacity price forecasts for several US regions. As part of the modeling effort, London Economics proprietary dispatch simulation model, PoolMod, was used, in conjunction with a competitive capacity-pricing module. The long-term modeling effort required detailed investigation of the micro and macro-economic issues facing these regional markets: demand profiling, growth forecasting, reserve margin and new entry activity assessment. This analysis was used by a client in establishing market values for assets they have targeted to acquire over the medium-term.
- ***Completed initial modeling and organized competitive market analysis tutorial for the staff of the Italian Energy Regulatory Authority:*** worked with the regulatory advisors to the Italian government in their on-going effort to restructure the power sector in Italy. Julia, as part of an international team of economists consulting the regulator, led the competitive market modeling tutorial. She advised IERA staff on the use of London Economics' proprietary pool simulation model in assessing the current issues in the Italian generation market (such as potential market power problems) and market conditions after privatization/divestiture.
- ***Valuation of coal-fired generation assets in the NYPP:*** forecast energy and capacity prices for the New York market on a sub-regional basis, rooted in transmission constraint parameters. Utilizing London Economics' proprietary pool simulation

model, Julia composed detailed unit-by-unit performance, revenue and cost parameters over the next twenty years. In addition, she investigated the affect on market projections by varying key drivers and scenario assumptions, in an effort to bracket the perceived risks to clients. Julia studied the influence of several key market drivers, such as the implementation of various environmental programs, changes to system supply-demand profile due to various new entry/retirement profiles, modification of market rules, and shifts in key input markets (e.g. coal, natural gas and oil markets).

- ***Strategic review for major US investor-owned utility:*** performed in-depth analysis of the strategic implications of US deregulation by studying the impact of unbundling in the US on the fundamental economics of the electric power industry at all points on the value chain; identified regional investment opportunities congruent with these dynamics.
- ***Valuation of New England, PJM and Midwest generation assets:*** evaluated potential value of assets available under various regional auctions for a dominant IPP player. Julia worked with client in composing a bid proposal by assessing market risks posed by various factors, such as fuel price shifts, merchant plant construction scenarios, site conversion potential, and transmission constraints and through extensive production cost modeling.
- ***Strategic analysis of major UK firm's position in the Midwest:*** co-developed a model for the largest regional energy market in the US, in order to assess the client's holdings in the region, future IPP development and value of affiliates' contributions through the value chain: fuel provision, generation, and marketing.

## **PUBLICATIONS AND SPEAKING ENGAGEMENTS:**

Frayer, Julia "Prepared Presentation of Julia Frayer for Market Monitoring and Surveillance in the context of Market Design." Panelist, *PUCT Workshop for Project #28500*, Austin, Texas, June 10, 2005.

Frayer, Julia "Written Statement of Julia Frayer for the January 27<sup>th</sup> 2005 Technical Conference in Docket RM04-7-000" Panelist, *FERC Technical Conference*, Washington D.C., January 27, 2005.

Frayer, Julia "Competitive procurement options for Ontario's LDCs" Speaker, *APPrO 2004 Conference*, Toronto, Ontario (Canada), November 24, 2004.



- Fraye, Julia, Nazli Uludere, and Sam Lovick "Beyond market shares and cost plus pricing: designing a horizontal market power mitigation framework for today's electricity markets." *Electricity Journal*, November 2004.
- Fraye, Julia "The World Changed on August 14<sup>th</sup>: the (Second) Great Northeast blackout." Chairman of Panel Session, *Electric Power Conference* 2004, Baltimore, Maryland, March 30, 2004.
- Fraye, Julia "Alternative to LMP pricing for transmission: a case study of the ICRP approach used by National Grid Company in the UK." Speaker, *Electric Power Conference* 2004, Baltimore, Maryland, March 31, 2004.
- Fraye, Julia "Big ticket leasing - what next for the future?" Panelist, *Big Ticket Leasing* 2003, London (United Kingdom), March 12, 2003.
- Fraye, Julia "Evaluating the Electron Highway" Speaker, *IPPSO 2001 Conference*, Richmond Hill, Ontario (Canada), November 28, 2001.
- Fraye, Julia and Nazli Uludere "What is it worth? Application of real options theory to the valuation of generation assets" *Electricity Journal*, November 2001.
- Goulding, A.J., Julia Fraye, Jeffrey Waller "X Marks the Spot: How UK Utilities Have Fared Under Performance-Based Ratemaking" *Public Utilities Fortnightly*, July 15, 2001.
- Fraye, Julia "How much is it worth? Applying real options valuation framework to generation assets" Speaker, *Electric Power 2001*, Baltimore, Maryland, March 22, 2001.
- Goulding, A.J., Julia Fraye, Nazli Z. Uludere "Dancing with Goliath: Prospects After the Breakup of Ontario Hydro" *Public Utilities Fortnightly*, March 1, 2001.
- Fraye, Julia and William Chapman "Improving price forecasting in wholesale power markets through the application of models of strategic bidding" Speaker, *EPRI International Pricing Conference* 2000, Washington, D.C., July 28, 2000.

**BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE  
STATE OF CALIFORNIA**

In the Matter of: )  
Preparation of the 2005 )  
*Integrated Energy Policy Report* )

Docket: 04-IEP-1D

I, Chester Hong, declare that at noon on July 8, 2005, I electronically by e-mail transmitted the attached **"TESTIMONY OF CALIFORNIA ENERGY COMMISSION STAFF ON IOU APPEALS OF EXECUTIVE DIRECTOR'S NOTICE OF INTENT TO RELEASE AGGREGATED DATA"** to the following:

**Christopher Warner**  
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**Assistant Chief Counsel, Jonathan Bles**



**California Energy Commission Staff**

**Senior Staff Counsel, Caryn Holmes**

**Michael Jaske**

I declare that under penalty of perjury that the foregoing is true and correct.

  
(Signature)